landscape architecture

THE MAGAZINE OF THE AMERICAN SOCIETY OF LANDSCAPE ARCHITECTS 4/2010 • $7



LONG

harmonious proportions

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symmetry

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clarity

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repose

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beauty

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simplicity

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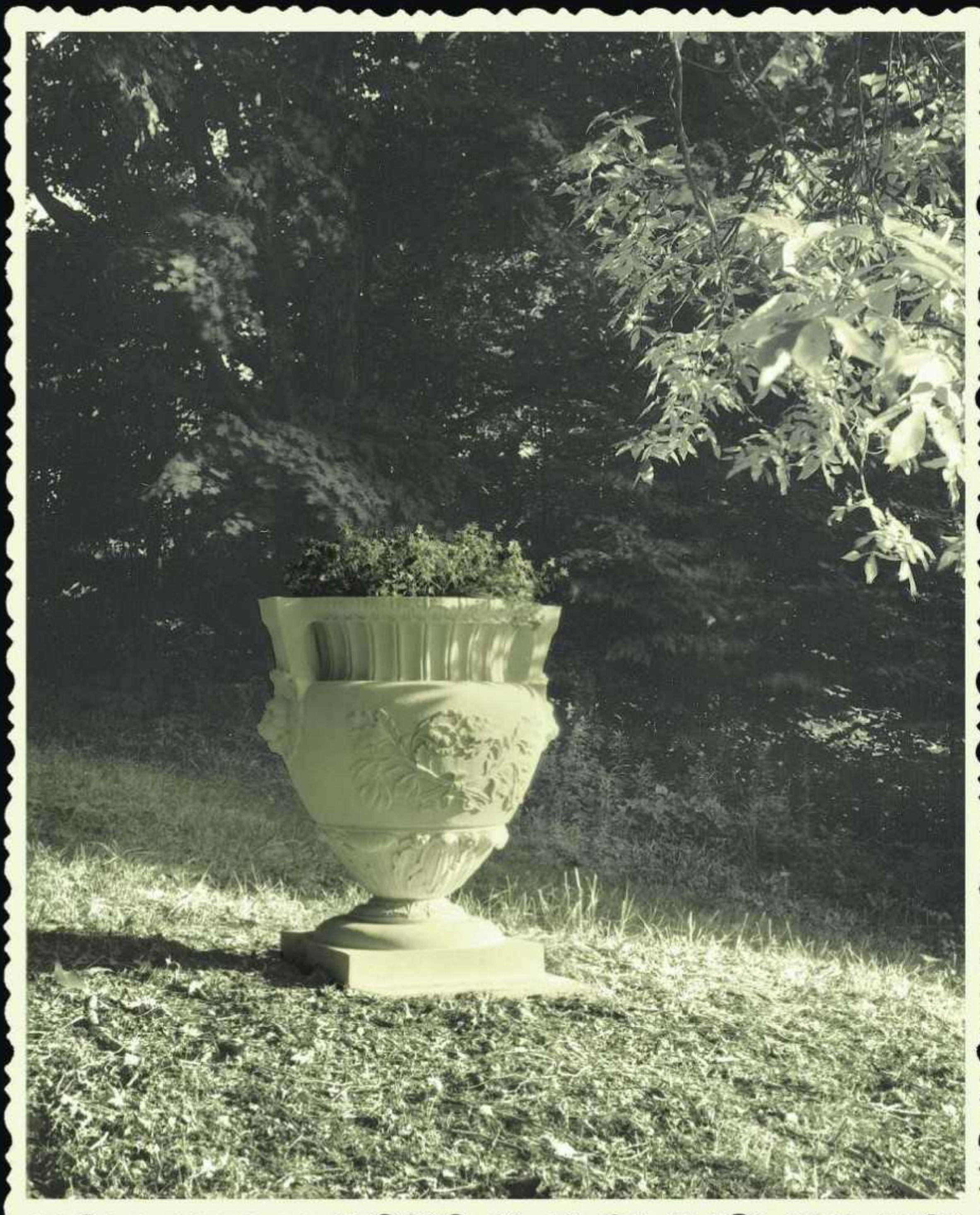
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APRIL 2010
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ON THE COVER

Citygarden in St. Louis is part of efforts to revitalize that city's downtown, page 116.

Photograph © Debbie Franke 2009



© 2009 MINNESOTA TWINS/PHOTO BY WAYNE KRYDUBA

Target Field, the new home of the Minnesota Twins baseball team, shown here under construction last fall, has a heated turfgrass surface designed by a landscape architect.

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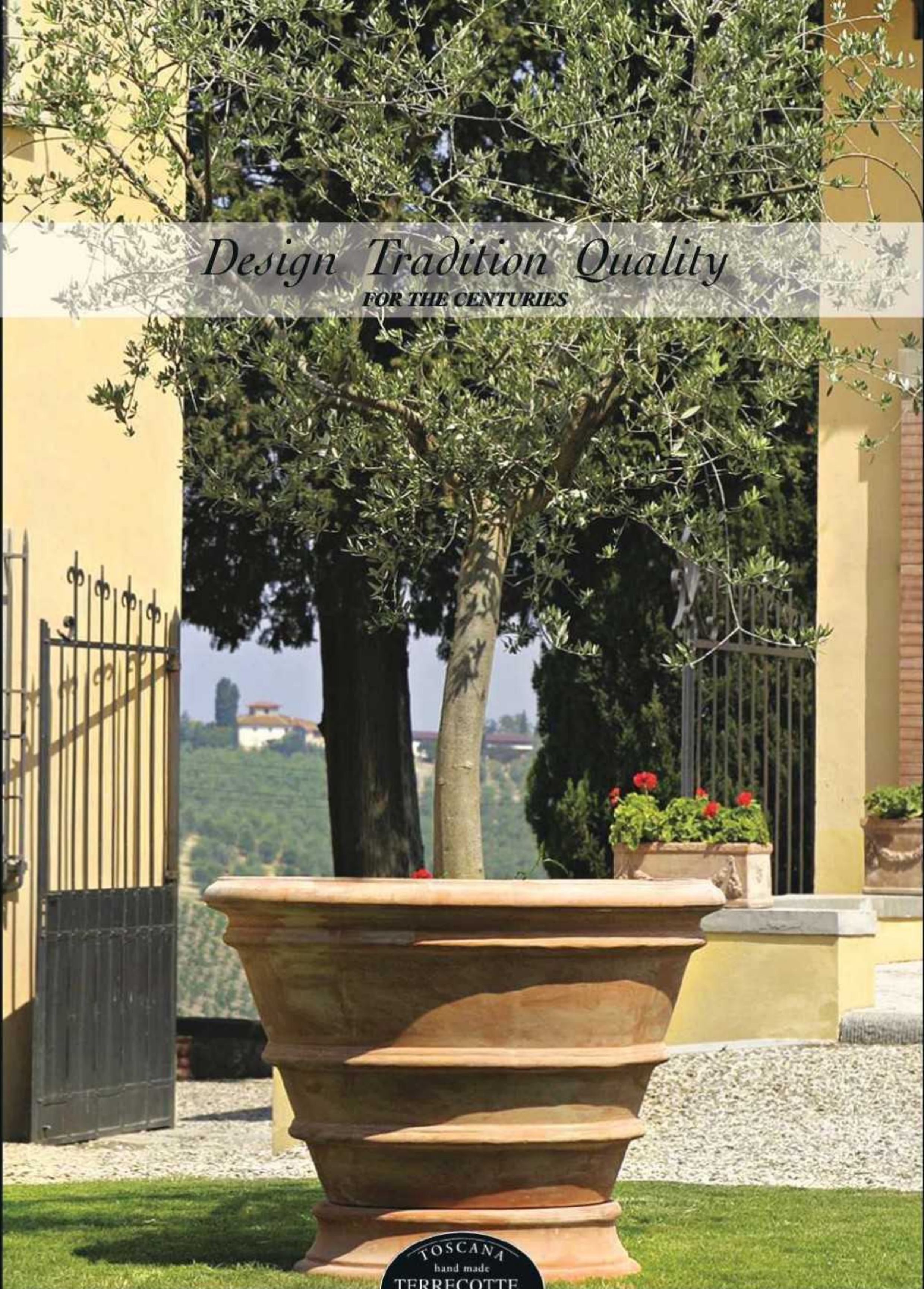
Two dozen sculptures greet visitors to Citygarden in St. Louis.
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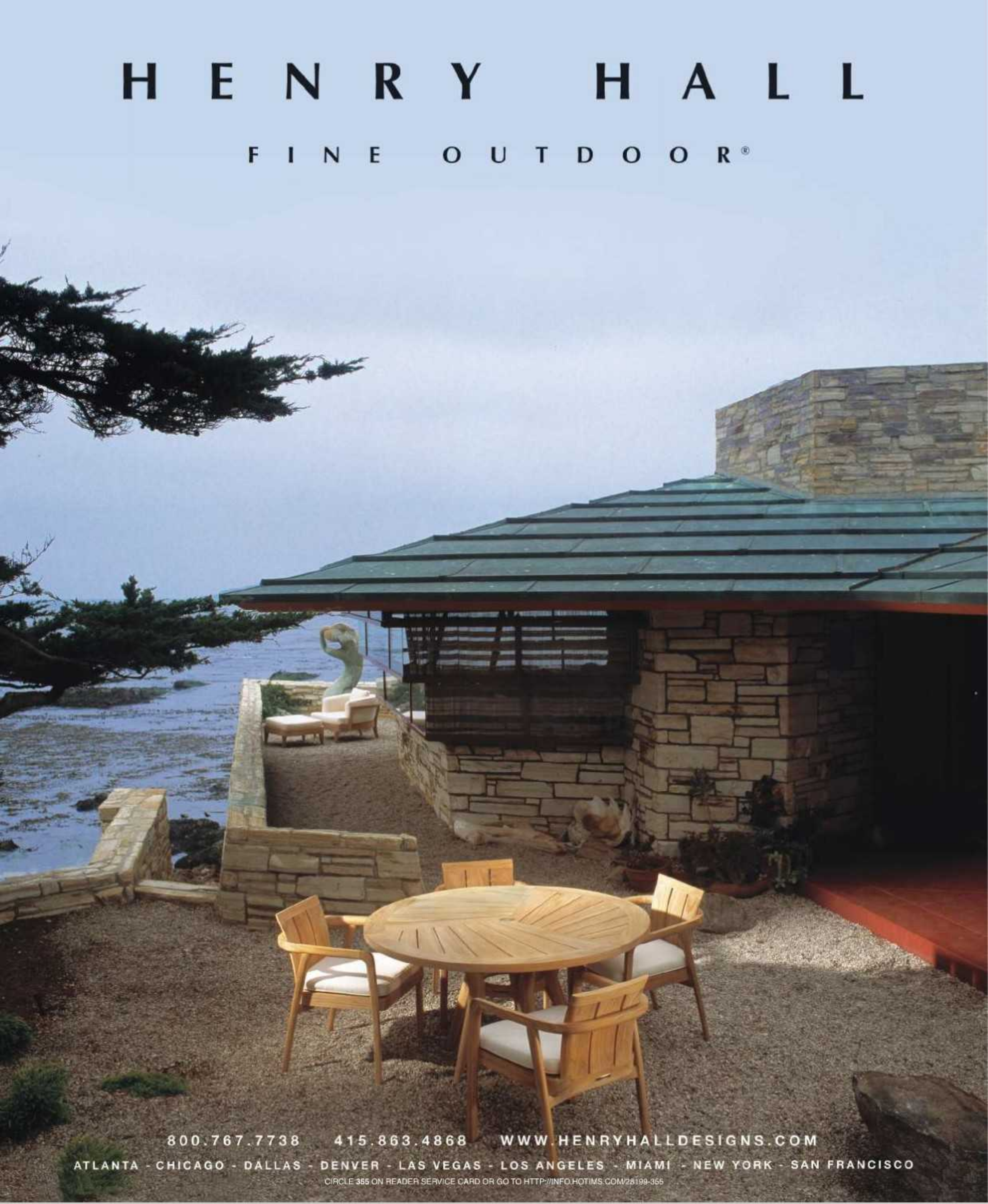
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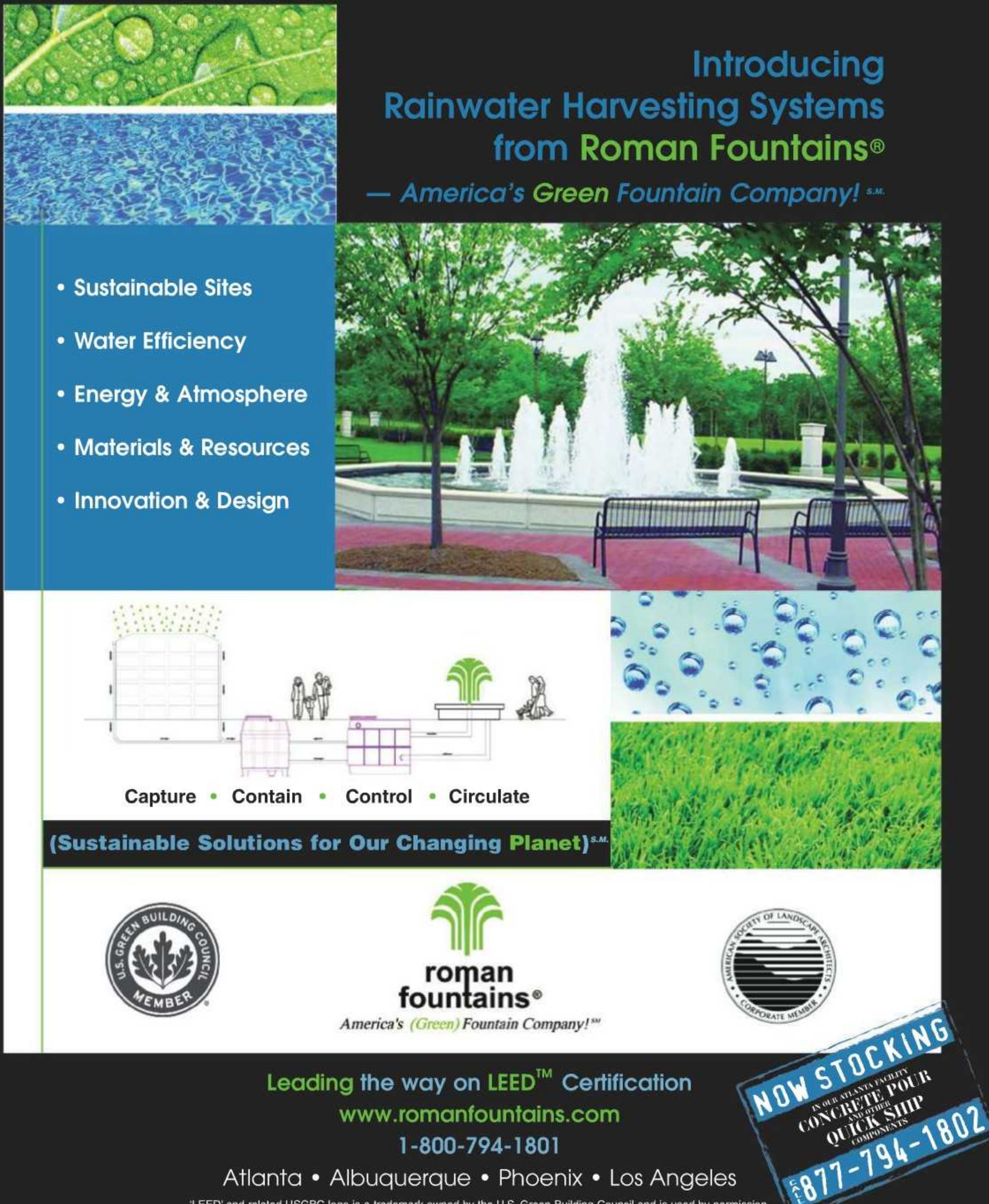
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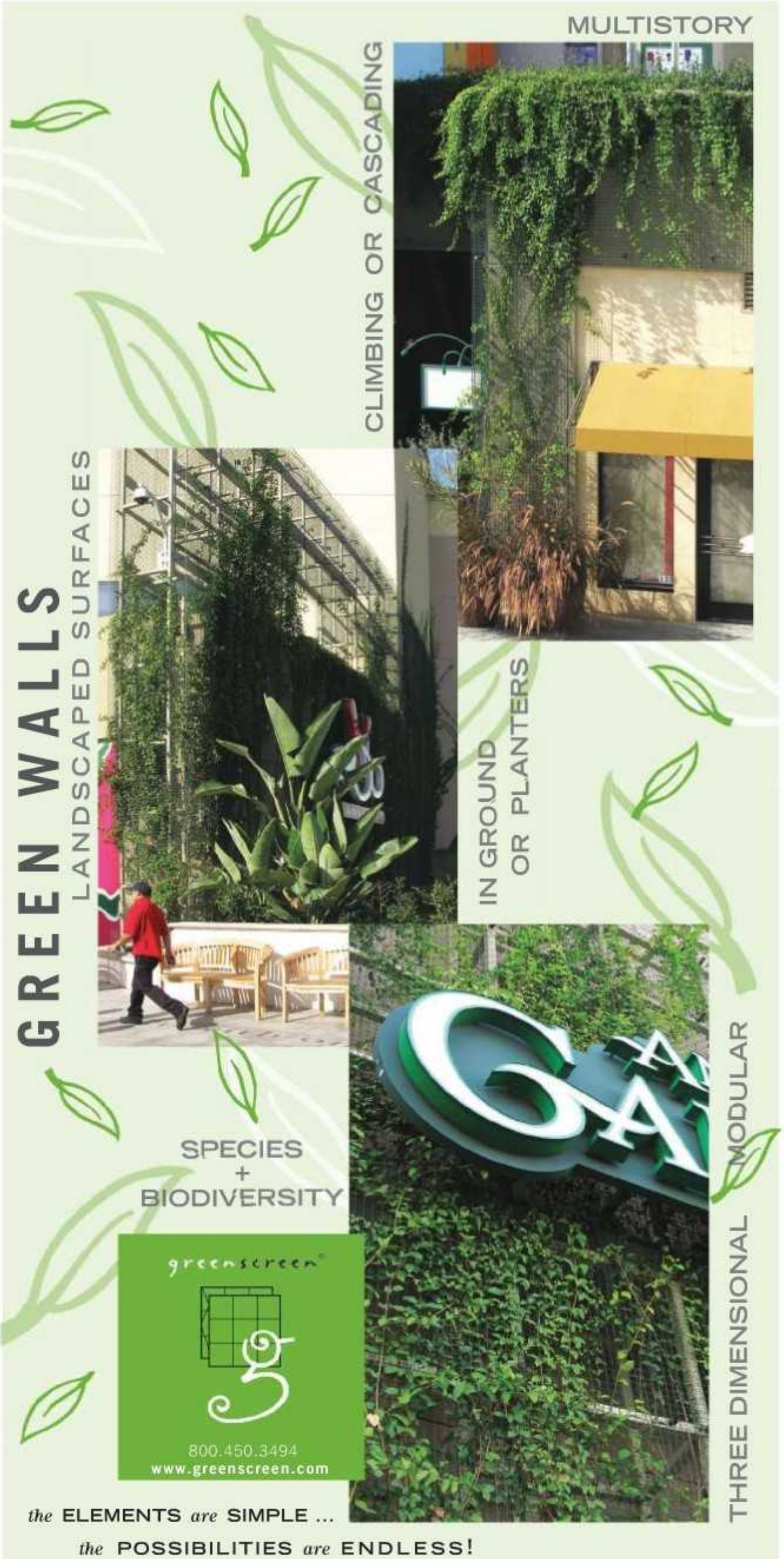
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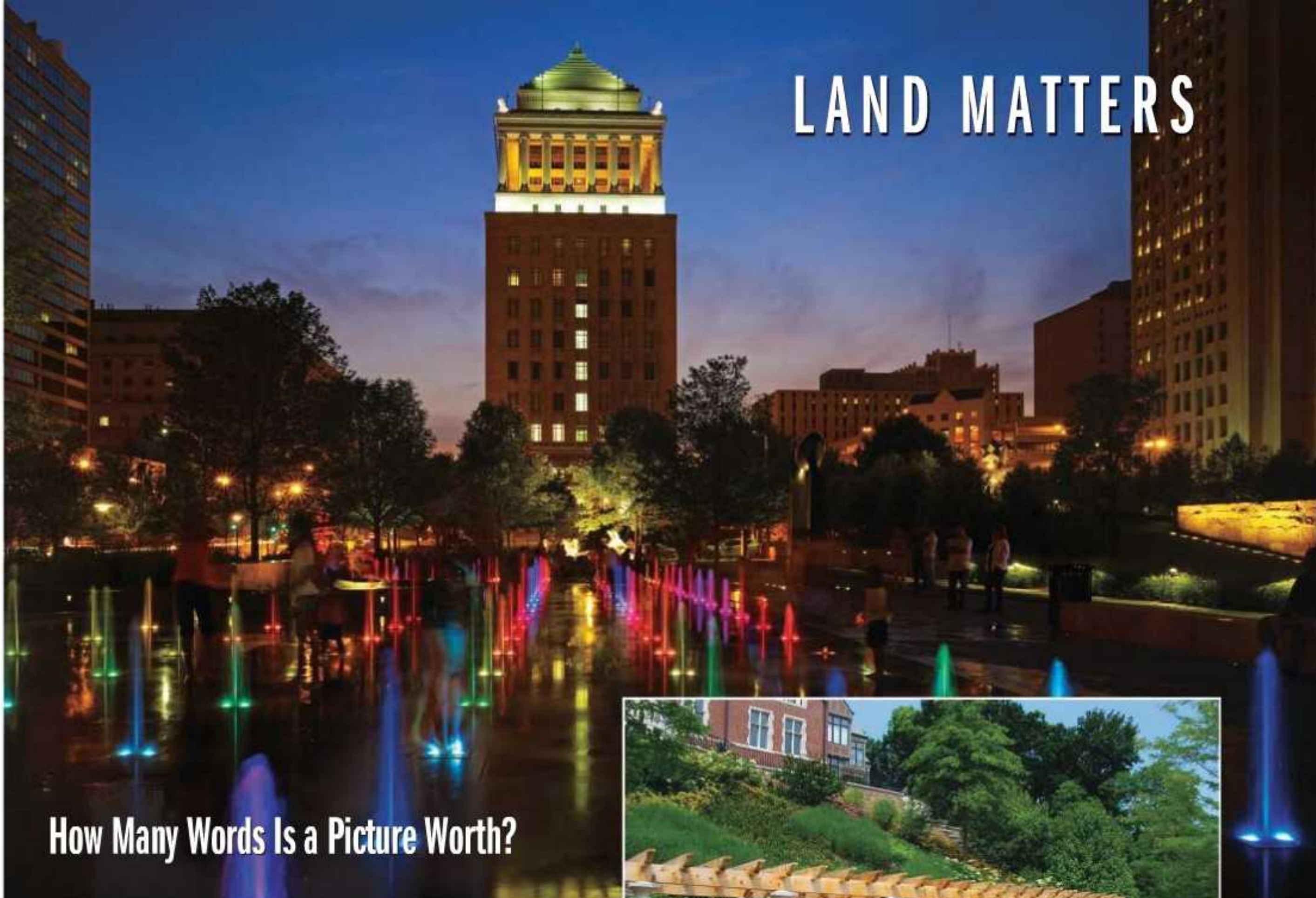

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How Many Words Is a Picture Worth?



COURTESY GATEWAY FOUNDATION, PHOTOGRAPHER STEVE HALL, HEDRICH BLESSING PHOTOGRAPHERS, TOP; NLH LANDSCAPE ARCHITECTS, INSET

IN THIS ISSUE there are beautiful images of a new sculpture garden in St. Louis, some professional photographs of a residential landscape in Illinois, and expertly rendered plans for a yet-unrealized project in San Francisco. Not appearing in this issue are several excellent projects for which we are still awaiting good photography. Does it seem right that exceptional projects are not published until they are exceptionally photographed?

I have been writing for *Landscape Architecture* for a number of years, and over the past few months I have had a privileged look at the magazine's inner workings while serving as interim editor. I can tell you this: Staff spends more time searching for, securing, cleaning up, debating, selecting, and placing images than on almost any other activity. I can also say that many of the comments (and criticisms) we get about the magazine have to do with the graphic content.

The word lover in me wants to believe that most of you actually read the articles, rather than just look at the pictures and scan the captions. The overworked professional in me knows that's not consistently the case. A lot has been written recently about how we're all reading more than ever before, but that most of what we read is in capsule format: 140-character Tweets, news headlines on the smartphone, back-and-forth e-mails. It's no secret what that's doing to the newspaper and magazine industry. We seem to have less time, and pictures are, frankly, faster.

Is *Landscape Architecture* too text heavy, or is it a bastion of thoughtful criticism and analysis? Does it have a good mix of image and word, or should it only publish work that is graphically exquisite? Do the images draw you into an article, or do they encourage you to skip across the surface without really diving in? These questions are ones that plague me both as a writer and as an editor—and ones that will certainly remain as a new editor takes the reins in the coming months.

These questions are pertinent because magazines have budgets. And that, of course, leads to one more question: Should more money be spent on words or on pictures?

Adam Regn Arvidson, ASLA
Interim editor



LETTERS

Remembering Lawrence Halprin

MY INTERACTIONS WITH Lawrence Halprin were brief but memorable: a lecture in 1961 in which he reminded me of a hard-edged version of comedian Danny Kaye, then as a landscape architecture student at Cal Berkeley, a sketch problem he gave in 1963 using dance notation to choreograph movement through an urban landscape at night after a rain, and then a design studio the following year. After graduation I often hung out with recent classmates at Halprin's San Francisco Embarcadero office. These were heady, hippy days. Anything was possible and Halprin's work combined art, nature, and humanity in new and experiential ways. Halprin was a sort of pied piper, part harlequin, part guru. During this time he wore faded denim trousers, faded blue cambric shirts—tradesman's clothes, with a bright red bandana hanging out of his left rear pocket. I went to one office happy hour where all of us (forewarned) showed up with red bandanas in rear pockets. It took Larry awhile to notice, but then he loved it. More than a decade later I chanced to see Halprin in line ahead of me at LAX checking in for the same flight to San Francisco. We sat together for the hour's flight, and he told me about the trials and tribulations of his ongoing Franklin D. Roosevelt Memorial project on the Mall in Washington.

Halprin was like that. While he had a strong regard for himself and his own ideas (self-promotion was clearly a professional strength), he was open to other people and ideas. He hired and nurtured talent and was a fearless innovator. Dean Abbott's "Remembering Halprin" in Land Matters (February) provides an excellent summary of Halprin's style and legacy. I would only add that Halprin's career overlaps those of both Thomas Church and today's hot young CAD-based designers, from post-World War II to the present. This is an amazing span of time and change in our young profession. I only hope his passing will remind us all of the importance of not leaving out the humanity as we explore art and nature.

JON COE, FASLA
Healesville, Victoria, British Columbia

I BECAME a registered architect in San Francisco in March 1974 and had planned to move to Philadelphia to work for Louis Kahn (I had interviewed there and was hired). However, Kahn tragically died that month, so I was a bit lost in San Francisco. Lawrence Halprin had a very energetic office there, doing many public works, and he had a reputation for fresh ideas and attitudes. I didn't have a formal interview but was provisionally hired as a model maker.

"Halprin was a rare figure, dedicated to making imaginative public space on a new, experimental scale."

The Flint, Michigan, waterfront project was late in design and the designers on the team were arguing with each other. This was a huge Army Corps of Engineers flood control project concerning a river that cuts right through the city. After one of the legendary "design workshops" run by Jim Burns, the city of Flint hired Halprin's office to humanize the concrete walls and make a park with public fountains out of the Army Corps requirements. I began just building the model and working with the design within the model construction as the two project designers continued to argue. We were running out of time and the big model had to go to Flint for a presentation in one week. I made a "sunken building" fountain, all according to the Fibonacci series of proportions, an amphitheater arcade, a water wall fountain powered by an Archimedes Screw, and a "u" tube allowing this water to pass under the street. One day Halprin looked down from his mezzanine office above the work space and told the arguing designers, "Just let him finish it! He's doing a great job!"

Halprin was the amazing free spirit who could suddenly let a model maker transform into a project designer. I stayed on to lead the construction drawings for this landscape project, working with the engineers and the wonderful Sat Nashita as well as John Cropper. There was great enthusiasm as the city of Flint approved the project based on the large model. The project was realized, and I remember visiting the site around 1995, 20 years later, to see the Archimedes Screw slowly turning and continuing to lift water to the fountains via natural power. This past month I received images showing the restored "sunken building" fountain.

Halprin was a rare figure, dedicated to making imaginative public space on a new, experimental scale. He still inspires me today—the fusion of landscape, architecture, and urbanism is as urgent as ever.

STEVEN HOLL
New York

I WAS SITTING ALONE in the shadows at Keller Fountain nearing the end of a trip north with my first-year graduate design studio. I had recently entered the world of landscape architecture with little knowledge of design or history—my background was environmental science and, although stagnant, I had felt safe in my understanding of that realm. That sense of safety had become the catalyst for my interest and transition into landscape architecture, and it was during this moment of solitude that I realized the nature and extent of my decisions. Lawrence Halprin was unknown to me only months prior (I cringe to say this now), but in one fell swoop he had seemingly dismantled my safety net, pushed me closer to the edge, and presented me with something worth risking it all for.

TIMOTHY BARRETT, STUDENT ASLA
Claremont, California

I WORKED FOR Larry Halprin back in 1980 as a junior member of his very small

LETTERS

studio office. Most landscape architecture students dreamt of working for Lawrence Halprin; I didn't really know who he was when I interviewed for the position of office gofer. I had taken one introductory course in the Landscape Architecture Department at UC Berkeley and thought it was interesting (I was just finishing up a degree in comparative literature). I asked one of my housemates about applying for a job in a landscape architecture firm; he knew Larry from attending Anna Halprin's dance workshops. It turned out they were looking to replace their current junior member because she was moving to

Larry had a reputation for being headstrong, opinionated, and sometimes a larger-than-life character.

Sweden. It all fell into place rather quickly. Little did I know that the next year and a half would change my life forever.

Larry's office was more like a family in the 1980s. The staff consisted of Larry, office manager Dee Mullen, workshop facilitator Jim Burns, slide archivist Jeri Sully, architect Ed Berger, and a number of consultants who came and went as needed. Funding had not yet been granted for the FDR Memorial, but the project was very much alive in the form of models and drawings plastered all over the office. Larry was often away in Jerusalem working on the construction of the Armon Hanatziv or supervising the construction of the plaza at the Levi Strauss headquarters in San Francisco. In addition to his projects, there were also requests for lectures, traveling art shows, workshops, and his collaborations with his wife, dancer Anna Halprin.

Larry had a reputation for being headstrong, opinionated, and sometimes a larger-than-life character. He was all of these things, but he was also one of the most interesting and genuine people I have ever met. He expected his staff to work hard, but he rewarded us by encouraging our creativity and individuality. When I expressed an interest in taking a perspective drawing class after work (no computer drafting in those days), Larry insisted on paying for it. At Christmas we were allowed to choose one of the prints in his traveling art show as our Christmas present. I still have that print hanging in my office, and every time I look at it I am reminded of how lucky I was to be a part of Larry's world.

Every once in a while, a gifted person comes along who questions the status quo and looks at the world in a totally different way. Lawrence Halprin had the rare combination of talent, insight, and the ability to turn his ideas into reality. He will be missed.

NANCY SCHREMP PAUL
North Vancouver, British Columbia

Designer Says Criticized Park Is a Success

THE SHORT ANSWER to the article's ("Image of a Public Park," February) subtitled question "Is a park in Miami Beach emphasizing style over substance?" is "No."

We take issue with the authors' assertion that the park "expresses disdain for its users and its context."

Regarding its users, if the residents and visitors who flock to the park are any indication, the park must be considered an overwhelming success. Anyone can verify this by Googling South Pointe Park and reading the users' comments. Many people have adopted the park as part of their daily life and make it a point to bring their out-of-town guests to visit the park; in a sense, it is becoming a destination place.

Park users now enjoy a diverse range of active and passive play experiences, including kite flying, playing ball and soccer, walking dogs, picnicking, outdoor dining, wheeling down the sloped walkways, playground recreation, strolling the Cutwalk and coastal hammocks, exercising (a popular use of the sloped berms), and just gazing out over the park and ocean from the elevated landform.

Contextually, the park is designed in direct response to its site, surrounding neighbors, and climate. One of the park's prominent features is the Cutwalk, a 2,000-foot-long by 20-foot-wide promenade interfacing Government Cut, the principal waterway along the park's south perimeter that links the Atlantic Ocean and Biscayne Bay. The Cutwalk also provides the missing link between the Beachwalk and its Baywalk. Facing the Atlantic Ocean, a broad dune field showcases native dune/coastal vegetation, attracts wildlife, and provides the user with a heightened awareness of the local ecology. To the west, the park's open space lawns and informal dog park area open to Biscayne Bay and views to Miami's downtown skyline and sunset. Finally, a 13-foot-high serpentine landform provides unbroken panoramic views over the park and beach, giving South Pointe Park users their first views of the Atlantic Ocean and a feel for the site in its entirety.

A significant problem plaguing the former park was its lack of connection to the city's street grid, from which it was sealed off by a virtual wall of large, private condominium properties. One major entry to the park at Washington Avenue was unfortunately sited alongside the service alley of an adjacent condominium. Our firm identified this connectivity issue at a city-sponsored charrette in 1996, recommending that Ocean Drive's public right-of-way be extended through the privately owned parcel to the park's north boundary.

The opportunity to realize this goal arose when the same parcel's developers came to the city for approval of a new, two-tower condominium project. The city, seizing its opportunity, made the development conditional on creating a public access easement from Ocean Drive to the park. The new park's design also strengthens this linkage by featuring the Washington Avenue and Ocean Drive pedestrian axes as major park elements.

Our planting design emphasizes biodiversity and the use of native coastal vegetation, along with the preservation and transplanting of more than 400 sabal and coconut palms and 65 trees (many of the existing trees had been ravaged by the twin hurricanes of 2005, leaving relatively few trees in good enough condition for transplanting). The decision to approve

this transplanting program was taken at great risk, since the landscape contractor did not guarantee the transplanted trees' survival. With probably a 95 percent survival rate due to careful planning and installation, the program was a great success, as it gives the park a more mature visual character and more shade sooner, while saving hundreds of our state's native palms, coconut palms, and other trees.

Supplementing the transplant program, the proposed tree planting program is designed to establish a biodiverse, sustainable landscape. Overall, some 368 new trees—with 25 species, 23 of which are South Florida native coastal species—were installed. Naturally, trees so recently installed cannot be expected to provide a fully realized shade canopy: Trees take time to grow. Additionally, native coastal tree habitat, periodically sheared by wind and hurricanes, eventually evolves into a low-canopied, multitrunk hammock behind the dunes. A large, publicly funded park cannot usually afford to be designed for instant gratification. Rather, our design opted to plant more trees at smaller sizes: This has the obvious advantage of planting more trees within the budget, while allowing the garden to grow and evolve.

Further, there is ample shade already provided through the dense clustering of palm species. The popular use of the lawn areas as informal picnic and relaxation areas is evidence of this shading effect, which will only increase as the palms mature and become reestablished.

Some aspects of the park's design program precluded the initial planting of trees and palms. A large "iceberg" sculpture, originally conceived at the park's west end (page 132 in the article), has yet to be realized. The design called for infilling this area with trees and palms once the sculpture was sited. If it is not installed, we agree that more trees and palms should be planted in this area and around the boat basin. The coastal dune area—designed as a natural area attracting wildlife—was also sparingly planted with trees and palms for two reasons: (1) the full-sun requirements of sea oats and other coastal species, and (2) to allow for uninterrupted panoramic views from the top of the serpentine landform. The original design called for sabal palms informally clustered around the bench locations, but these were later removed for the reasons stated above.

As to the sod specification, the use of seashore paspalum was based primarily on site and maintenance factors. This grass species is highly salt and drought tolerant. Moreover, it has been used with great success in Miami Beach on two other public projects, and the city was happy with the results. The installation of grass, especially in a heavily used park setting, requires vigilant maintenance as it becomes established: This did not happen. Pests and weed infestation were not properly controlled from the outset or managed effectively after the problems surfaced. (Note: The June 2009 flood, wherein large parts of the park were submerged for several days, at least partly contributed to the sod's condition.) However, we are confident that the recent maintenance program the city and contractor have engaged in will dramatically improve the sod condition.

> **More in-depth research and investigation before unsheathing the pen would be the fair thing to do.**

To close, we believe that South Pointe Park is much more than style, but a fitting and appropriate response to substantive issues of usability, contextual relationship, and sustainable, long-term planting and maintenance. A public park that, in time, will prove timeless, to be enjoyed for generations to come.

In terms of the article's content, we appreciate informed criticism as an important learning tool and a means to foster healthy debate on design issues. As all landscape architects practicing in the public sector know, there are a multitude of programmatic, budgetary, and construction issues to be resolved with any

large public project. More in-depth research and investigation of these issues before unsheathing the pen would be the fair thing to do, while contributing to the readers' understanding of the project's design process and response.

Conversely, neither of the authors had the journalistic curiosity to contact us, though we live in the same town. We believe that if a firm's name is used in a critical essay, this same firm should be given the opportunity to respond to its critique directly. We can only hope that *Landscape Architecture* would exercise this editorial control on future Critic at Large articles.

BARRY MILLER, ASLA
Savino & Miller Design Studio
North Miami, Florida

Editor's Note: Currently, Landscape Architecture *does not require writers of Critic at Large articles to speak with designers. The intent of the Critic column is for the writer to experience the space as any other user would and to comment on the user experience.*

Design Has to Respect What's There

JEFFREY BARG'S EDITORIAL, "Class Conscience" (January), about the Lower Schuylkill studio at Penn impressed me. He's accurate in describing the planner's dilemma, and he's got some points worth our attention. He wonders how we, as designers, grapple with big sites and futuristic plans. Do we think sweeping, idealistic thoughts, or do we get pragmatic and worry about economics and how change affects the place? Do we cover our plans in green and assume that everyone loves a park, or do we appreciate what's there: the grittiness, the rough edges, and the history?

A few years ago, I kayaked the Lower Schuylkill. My tour took me through some of Philadelphia's best and worst landscapes: elegant bridges, an urban skyline, bucolic spaces, historic mansions, wildfowl habitat, dams, and tributaries. There were rusted ship hulks, derelict docks, invasive plants, mud so deep and toxic that I was afraid my feet would disintegrate upon immersion, and oh, the smell: refineries, industrial drains, and sewage. But the river had charm and dignity in all its manifestations. It was, despite what humans had done, an organic, living thing, the artery through which all flowed.

The question that Barg asks and the one I pondered on my trip downriver is, "How do we design within the parameters of what already is without destroying the soul of the place?'

I'm not proposing that all designs on the land are bad, or that none have merit. It's just that the inevitable outcome of "placemaking" often ends up an imposition of the designer's beliefs, values, and aesthetics rather than a voice of the place itself. The problem is that the proposed design turns out to be a moment in the continuum when in reality a landscape is the continuum.

What I'm trying to say is that a place is by nature chaotic, and the randomness of how an urban landscape evolves needs to be considered. Barg worries about this, and he's correct to do so. The plan for the Lower Schuylkill can't be as simple as eliminating the big, bad oil refineries, housing projects, and other ugly things and then replacing them with greenswards, parks, and trees because, first of all, we need those nasty things and second, they're there. A sensitive plan is not a utopia of well-heeled pedestrians strolling along a pastoral, riparian esplanade. The plan has to serve a multitude of purposes from industry to recreation to wildlife habitat, but most important it has to respect what is already there, or we kill the place.

PETER HELMETAG, ASLA
Pawlet, Vermont

"When Rivers Rise," Landscape Architects Should Rise to the Challenge

I VERY MUCH ENJOYED the Practice article "When Rivers Rise" (February) that focused on the Grand Forks/East Grand Forks Greenway. As lead landscape architect for the master plan, there are so many additional stories that I could contribute to Adam Arvidson's well-written article. Since so much of the article focuses on the role of the Corps of Engineers, I must share that it was the Minneapolis District Corps staff, specifically landscape architect Karen Nagengast, who contacted me and signed the initial scoping contract with Greenways Incorporated. The subsequent master plan contract was with the city of Grand Forks

but funded with federal dollars. I clearly remember Karen telling me how insistent the North Dakota congressional delegation was on having a "unique" greenway-oriented design solution to the flooding problems in Grand Forks. Led by Senators Dorgan and Conrad, it was clear that the typical Corps solution would not be acceptable. Congressional involvement is perhaps one reason why the solution more than a decade ago in Grand Forks is not the practice for Fargo and other recently flooded midwest communities.

Finally, I am glad to know that Kevin Holden, ASLA, regards the Red River Greenway as "about the best example we have to date" when it comes to flood protection as a public amenity. I can assure you, during the three-year master planning process, there were few local or federal advocates for the greenway. Melanie Parvey is correct when she describes the criticism that the project initially endured. However, it is amazing to see how much of the master plan survived and was wonderfully transformed by Tom Whitlock, ASLA, and Damon Farber Associates into landscapes that are enjoyed today by residents and visitors. The city of Grand Forks deserves substantial credit for implementing the master plan recommendations.

The Red River Greenway will always be one of my favorite projects. Community residents, local government leaders, federal agencies, and the design team overcame so much to create a simple yet enduring landscape that is functional, attractive, and beneficial. I hope that the greenway will serve as a model for other communities to emulate.

CHARLES A. FLINK, FASLA
President, Greenways Incorporated
Durham, North Carolina

Correction

IN "Mastering Landscape Architecture" (March), there is an error in the chart "Curriculum Concentration Areas in MLA Programs" on page 74. Though history was a concentration area noted by responding schools, it was not listed as a primary concentration area by any. On page 68 in the same article, the reference to "more than half" of responding schools having a history emphasis reflects the fact that more than half of the schools that focus on design and ecology also have a secondary emphasis in history.

RIPRAP

A slightly irregular look at the new and noteworthy | EDITED BY LINDA MCINTYRE



The living wall just outside the Vancouver airport's international terminal comprises more than 2,500 modular planting boxes. Plants were selected for hardiness and shade tolerance.

COURTESY RANDY SHARP, ASLA

FACADE FLORA

Vancouver Vegetation Goes Vertical

A living wall greets international travelers.

SIX STORIES OF CONCRETE hold an elevator to a new light-rail station wedged between the international terminal at the Vancouver, British Columbia, airport and a parking garage. Going vertical was the only logical way to introduce some green space, says Randy Sharp, ASLA. And with shade and microclimate issues to deal with on the north-facing wall, he went beyond merely greening the space with climbing or cascading vines—he brought the wall to life.

Sharp, a principal of Sharp & Diamond Landscape Architecture in Vancouver, wanted to create a canyon-style living wall. He says that his nearly 60-foot-tall and 30-foot-wide living wall, one of the largest in North America, brings natural splendor where it is least expected. The airport's 10 million annual visitors exit the terminal and are immediately met by the vertical vegetation. The 2,701 modular planting boxes, each 12 inches square and three and a half inches deep, look like pizza boxes, Sharp says. Each individual living wall panel holds a planting box and is made of stainless steel with a geotextile bag strapped into the structural support. Inside the bag is a coir block—made from recycled coconut husks—drilled with up to 13 holes plugged with plants. In all there are around 27,000 plants.

To create what he calls a "wavy tapestry like a hanging carpet," Sharp used just four plants: green and silver varieties of Japanese

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spindletree *(Euonymus japonicus),* dark green dwarf lilyturf *(Ophiopogon japonicus),* and licorice fern *(Polypodium glycyrrhiza),* which is native in local canyons. The gentle curves defined by the differently colored plants reflect the flight paths of airplanes. The wall also connects to the overall coastal rain forest motif in the terminal and creates a soothing environment for travelers, something that airport officials excitedly supported.

Sharp, the first to install a modular living wall in North America in 2006 at the Vancouver Aquarium, says that the walls are expensive to install and maintain, but the aesthetic and acoustic benefits—airports are noisy places, after all—make them worth the effort. Plus, with all that shade, achieving true density of color and coverage necessitates a living wall, since few vines thrive in such conditions.

Logistics, however, can be tricky. "Keeping it looking gorgeous is a big challenge," Sharp admits. A sophisticated seven-zone drip irrigation system with electronic monitoring keeps the plants hydrated. "These plants are being grown in extreme conditions," Sharp adds. "They are grown sideways, dealing with gravity, in extreme temperatures and with desiccating winds." With all that against the wall, staying living is a feat in itself.

—TIM NEWCOMB

INSTANT GRATIFICATION

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New iPhone app puts latest issue at your fingertips.

IT'S NOW EVEN EASIER to keep up with the latest in landscape architecture wherever you happen to be. Digital publisher Zinio, which brought you the digital version of *Landscape Architecture,* recently announced the launch of a free iPhone application. Content will be optimized for whatever size or type of screen you have. Download the app at the iTunes store, *itunes.apple.com/us/app/id342582783*?mt=8.



CONOR MASTERSON

The stumps, harvested from naturally fallen trees and those logged selectively under Ghana's more ecologically conscious policy, are meant to convey a message of hope.

TREE TALES

Out of Africa

A London installation goes to the roots of forest preservation.

"I AM NOT AN ECOWARRIOR," says Angela Palmer, the British artist behind *Ghost Forest,* an art installation of giant African tree stumps set up in London's Trafalgar Square last November. Shipped from the Suhuma forest reserve in Ghana, West Africa, the 10 stumps stood on plinths around Nelson's Column, the famous 169-foot monument to the victor of the Battle of Trafalgar. Although Ghana has lost 90 percent of its rain forest over the past 50 years, the installation carried a "strong message of hope and optimism for the future," says Palmer. The country's current selective logging policy is an improvement over the "slash and burn or clear felling that we see in other countries," she explains. Seven of the stumps on show came from trees that fell naturally and three resulted from selective logging. Each weighs at least two tons, with the largest a gnarly 22-ton remnant of a denya *(Cylicodiscus gabunensis).*

Palmer chose Trafalgar Square as it establishes a strong reference point. "It would be incredibly powerful," she says, "if people could just stand under the column and look up to the skies to the top of Nelson's hat and imagine that that is the height these great majestic trees grow to in the tropics."

After London, the installation traveled to the Danish capital, Copenhagen, in time for the December UN Climate Change Conference. Palmer had originally planned to chop up the trees upon their return to the United Kingdom and hand out the pieces as thought-provoking mementoes. But their "raw beauty" moved her, she says, and she couldn't go through with it. Where they go next is still up in the air.

—ROBERT SUCH


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The design, *left* and *below*, was installed inexpensively using a template made of weed-control fabric, grass seed, and gravel, *bottom photos*. Neighbors like the change in what is now informally known as the "crop circles garden."

NO VACANCY

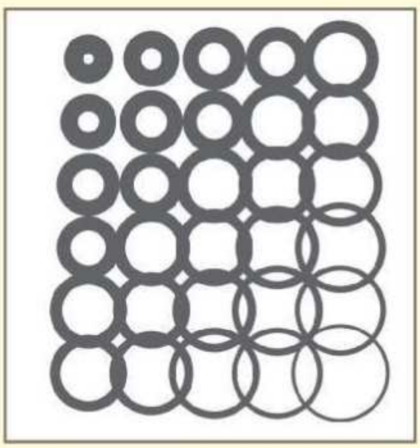
A Pattern for Improvement

Philadelphia designers address a knotty urban issue.

VACANT LOTS ARE A PROBLEM in many cities, often creating neighborhood voids that attract crime and show little in the way of care or human presence. A Philadelphia design firm, PEG office of landscape + architecture, has begun experimenting with greening techniques that transform these lots into playful reflections on traditional garden design, providing an innovative and inexpensive greening strategy with little maintenance but lots of visual interest.

More than 60,000 vacant properties dot the city's landscape. The Pennsylvania Horticultural Society has worked modest transformations on more than 3,000 of these lots, regrading the sites and installing trees, lawns, and picket fences as an interim land management program (see "Thinking Big...and Small," *Landscape Architecture,* March). But with the city's blessing PEG designers Karen M'Closkey and Keith VanDerSys decided to explore alternatives to these temporary greening measures.

"Not Garden" has as its foundation custom-cut weed-control fabric fashioned in geometric patterns to reflect the traditional knot garden. The exposed areas are seeded. Unseeded areas are covered with



small-grade gravel. The patterns and the fabric can be sized for the small lot or, as in the case of "Not Again," a much larger space (1,800 square feet). The two gardens were designed by M'Closkey and VanDerSys; student volunteers from PennDesign (the University of Pennsylvania's School of Design), where they both teach, came out to clean, prep, and install the materials over the course of just a couple of days.

M'Closkey credits the support this program has received from the Urban Tree Connection community garden initiative, which has a long-established network within many of the city's communities. "Not Garden" is located adjacent to one of UTC's established produce gardens, where local gardeners have had a chance to see the evolution of the site from abandoned lot to patterned park. Reaction from the neighbors has been positive—they enthusiastically refer to "Not Garden" as "the crop circles" garden, and neighborhood kids have added a little touch of their own, using the small gravel fill to build little piles within some of the circles.

This summer will be an important time for the gardens, as PEG returns to examine how they have overwintered and to see if "Not Garden" and "Not Again" are faring well enough to begin the process of exploring a broader application of the practices. In the meantime PEG is starting to consider the next opportunity for innovative temporary installations in the urban context: stormwater gardens. The new Philadelphia Water Department's Office of Watersheds has announced efforts to transform vacant publicly owned land into stormwater amenities, and PEG will be experimenting with custom-cut materials that provide stormwater management in a similarly simple but eye-catching style.

Learn more and see the gardens at *www.peg-ola.com.*

—JENNIFER DOWDELL, ASSOCIATE ASLA



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FOUL WEATHER FIELDS

Natural playing surfaces get heated.

By Tim Newcomb

THE GRASS IS HEATING UP in professional sports. When high-profile athletes and big-money television contracts are at stake, massive attention is spent on keeping turf pristine. To meet the needs of athletes and cater aesthetically to fans, a growing number of sports franchises are choosing natural grass playing surfaces. But to keep those surfaces viable in harsh climates, underground heat plays a vital role.

The same heating systems that have been used for years underneath sidewalks and driveways to keep ice from forming have been super-sized for Major League Baseball and the National Football League. Whether old-school electric-coil, forced-air, or hydronic radiant heat (where either heated glycol, water, or a mixture runs through underground pipes), these systems have been, in general, growing in use by landscape architects. But nowhere are these systems more visibly in use than in professional sports.

The NFL's fall and winter season requires these systems to, at times, work around the clock to maintain unfrozen, healthy sod. It's a little different in MLB. With seasons starting the first week in April, heating systems are used to bring grass out of dormancy and protect it from frost, as at the league's newest stadium in Minneapolis. The Minnesota Twins are set to open Target Field this month and are making a bold move by shifting away from the artificial surface of the Metrodome to an open-air, natural grass facility. And in the harsh climate of Minneapolis, a hydronic radiant heating system was an obvious choice.

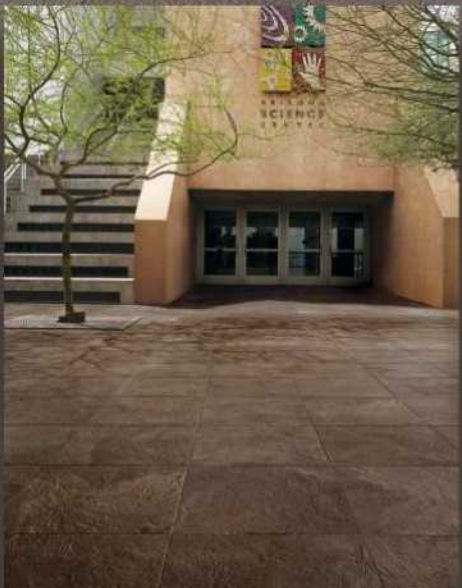
Brian Smith, a landscape architect with Populous (formerly HOK Sports), the firm behind Target Field, was charged with designing the actual playing surface, the "stage," as Smith sees it. "I don't think there was ever much doubt which way to go," he says. "The standard is a glycol/hot water system. Electric heating has been met with variable success. This seems to be the system that most folks use."

Smith wasn't in favor of trying out new technologies or working with less-efficient systems. He wanted what was tested and proven. While he did experiment with the idea of using reclaimed stormwater to run the system, in the end it was never implemented because it was too new. "Glycol is tried and true," he says. "There wasn't a lot of appetite for experimentation."

While the Twins don't have a forced-air system to complement their hydronic

The natural grass in the Minnesota Twins' new baseball stadium was made possible by an underground heating system.


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PEX tubing underneath the Twins' new natural grass field carries a water/glycol mix and heats the root zone.

component, they do have the space under the field to install one, if ownership ever decides to add it. Forced air can draw organic matter out of the root zone and push cool air into the roots during the summer. In designing such a field, adding in either a heating system or a forced-air component is simply another layer to the process and doesn't affect overall design, as long as there is enough space to work with, Smith says. He didn't see forced air as essential in Minneapolis, although he certainly understands its benefits, which is why there is room to add it in later. "Forced air is less expensive, but it is not as effectual as glycol," Smith says. In forced-air systems, the pipes with warm air are buried deeper than the eight to 10 inches below the surface of hydronic tubes.

Larry DiVito, first-year Twins groundskeeper, is already tinkering with his system—the fourth heating system in MLB—to get it ready for Minnesota's home opener on April 12. He says that getting the turf ready in Minneapolis for MLB-caliber play and aesthetics the old-fashioned way would be difficult, at best. He started running the heating system in October 2009 to keep the soil around 53 degrees to promote optimal root growth. He spent plenty of time testing different levels and seeing how the system and the turf reacted. DiVito also tweaked the system once he grasped the shade patterns of the new stadium's structure. He split the outfield into three zones instead of two, as he was especially concerned with right field's morning shade making it tough to dry out the turf. In all, the 41 miles of pipe are split into five zones.

While DiVito is concerned about how his mix of four types of Kentucky bluegrass will perform in deep-right field and right-center field, forcing him to run the heating system into June, that isn't the only place on a baseball field the system is important. "I need it more for the dirt [and

Basics of Turf Heating Systems

HYDRONIC. Using either water or a water–glycol mix heated by an off-field boiler, this radiant system sits under the sand layer of the turf and circulates the hot mixture through PEX tubing. The sand conducts the heat to the roots of the turf.

FORCED AIR. This system can either push heated or nonheated air through the sand to the root zone or pull organic matter from the root zone. This system is more often used as a supplement to a true heating system than as a stand-alone heating system because of the lack of heat it produces.

ELECTRIC. Wires coated in ceramic rubber sit under the sand layer of the turf and are heated electrically. The sand conducts the heat to the roots of the turf.

	HYDRONIC	FORCED AIR	ELECTRIC
Biggest pro	Gets the hottest and is the most efficient.	Has the ability to draw organic matter out of the root zone or even push cool air into the roots during the summer.	Is less expensive to install than a hydronic system.
Biggest con	Is the most expensive to install.	Produces less heat so it has less impact.	Isn't as efficient as hydronic and costs more to operate.
Costs	Is the most expensive to install, but less expensive than electric to operate.	Is the least expensive all around, but also the least effective.	Is less expensive than a hydronic system to put in, but the costs go up once it starts operating.
Maintenance issues	Leaks in the fittings will let grass-killing glycol into the root system, but the glycol may be a necessary evil to keep pipes from freezing.	This simplest of the systems has not shown major maintenance issues.	Pressure can crack the wires, meaning the only fix is to dig through turf and splice in new wiring.
What people are saying	"Glycol is tried and true. This seems to be the system that most folks use." —Brian Smith, *Populous landscape architect*	"It is more gradual, a way to help thaw, not a heating system." —Larry DiVito, *Twins groundskeeper*	"It is a maintenance nightmare, and is more expensive to run, too." —Mark Razum, *Rockies groundskeeper*


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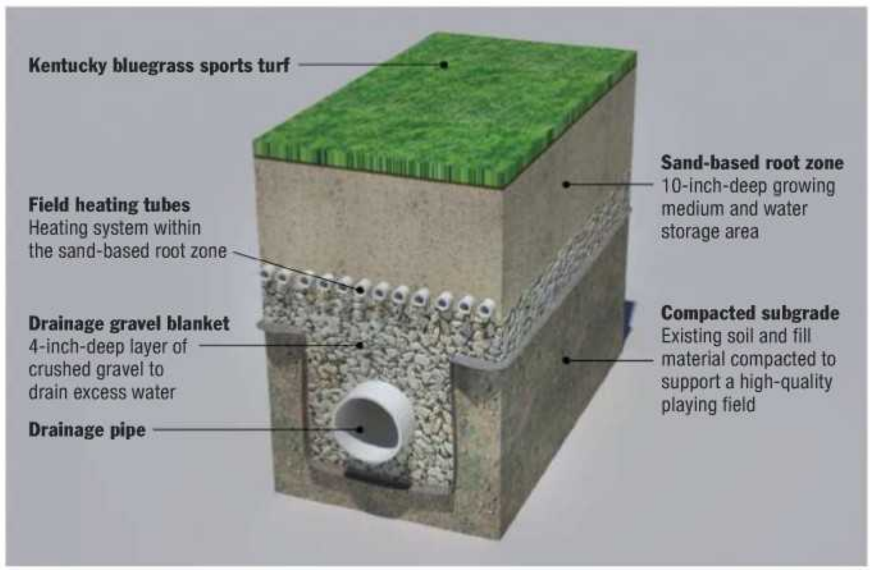
clay infield] than I do for the grass," DiVito says. "Thawing that would be the biggest headache."

IN SEATTLE, where local engineering and landscape architecture firm D. A. Hogan & Associates designed Safeco Field, which opened in 2000, groundskeeper Bob Christofferson says that his surface has a first-generation hydronic system beneath it, the first-ever hydronic system in MLB. "Ours is less than good by today's standards," he says. In fact, the Mariners had to add heating sensors after the fact to be able to monitor temperatures. However, Christofferson is the only MLB groundskeeper who has both a hydronic system and a forced-air system to either push the heated air into the turf or pull moisture down out of the root zone.

The New York Mets installed forced air at Citi Field (opened in 2009), serving more as a "warming" system than anything. "It is more gradual, a way to help thaw, not a heating system," says DiVito, who was previously the groundskeeper in Washington, D.C., for the Nationals, has worked in minor league stadiums in New England, and has knowledge of the New York stadium. "[Subterranean forced air] in that climate is a reasonable option, but it would not be sufficient up here [in Minnesota].

But if there is one groundskeeper who wishes his system was nicer, it is Mark Razum in Denver. The Colorado Rockies' groundskeeper says that the electric-coil system—the only stadium outside of a practice facility with electric heating in either the MLB or the NFL—he has had in Coors Field since the 1995 season is good, but certainly not great.

When the expansion Rockies started play in football-designed Mile High Stadium, team owners saw how much better the grass performed on the heated portion





Putting together a natural grass surface for a baseball team, *top*, is a construction feat in and of itself, with the underground heating system, natural grass sod, and clay. The field heating tubes lay on top of the drainage gravel blanket, but under 10 inches of growing medium, *center*. Laying sod at the Minnesota Twins' new Target Field, *right*, is really just the topdressing to the work that went on beneath the surface.

© 2009 MINNESOTA TWINS/PHOTO BY WAYNE KRYDUBA. TOP: COURTESY POPULOUS. CENTER; © 2009 MINNESOTA TWINS/PHOTO BY BRUCE KLUCKHOHN. BOTTOM

of the field than on the nonheated section (the field was configured only to heat football dimensions), so they naturally wanted to heat the new baseball-only field. "Glycol systems were just coming out," remembers Razum, "and we were reluctant [to experiment] because of the [limited] amount of time we had to get it designed, so we decided to go with electric, because that was what was out there."

Razum uses the system to get the field ready for the spring, turning it on around mid-February and keeping it going as long as he needs. The eighth-of-an-inch electric wire is covered by a thin coating of ceramic rubber sheeting and spaced about six inches apart in long pieces. Forty-five miles of wire sit on four inches of gravel beneath 10 inches of sand. But the cables are so sensitive that any vibrations or pressure can crack the ceramic and take out an entire section, giving the field nonheated streaks. The only way to fix the problem is to have an electrician locate the break, dig down, and splice the piece. "It is a maintenance nightmare," Razum says. "It is expensive to run, too. Glycol seems like a lot more stable system."

IN THE NFL, the first team to heat its field was the Green Bay Packers, owners of legendary Lambeau Field. At one time it had an electric system similar to Coors Field, but D. A. Hogan installed a hydronic system three years ago under a new playing surface. "Now we have even heat," says groundskeeper Allen Johnson. "The other field had four zones, but they didn't reach the corners of the playing surface. We added extra zones that extend under the concrete apron (which also melts snow)."

The sand-based DD GrassMaster turf (which mixes synthetic blades with natural grass) is kept heated to prolong the growing season. "When it gets really bitter up here, you can't get the surface totally warm because you can't control the ambient air," Johnson notes. "Really, the only variable we can control is the root temperature." He keeps the roots at roughly 38 degrees, just enough to keep the field from freezing and getting crusty. He also uses the system in the spring to jump-start new seed.

Tony Leonard, the Philadelphia Eagles' groundskeeper, says that his hydronic and

forced-air combination is turned on to an average of 55 to 60 degrees to keep the grass feeling natural, just the way his players like it. By playing with the system, he is able to soften and firm the turf as he needs.

David Anderson, an engineer at D. A. Hogan, says the blend of water and glycol appears to be functioning the best in both MLB and NFL stadiums. Adding in forced air ups the price tag but is proving effective and efficient as an add-on. Forced-air-only systems aren't viable options in cold-weather climates because they simply don't provide enough heat. Also, with a heating system already in place, some fields don't have the space (Lambeau Field, for example) unless the landscape architect designed in that kind of expansion possibility, as Smith did in Minneapolis.

"When it comes to baseball," says Brian Smith, "the game is to be played on grass." The heating system made that a viable option in Minneapolis.

The two largest manufacturers of these systems are Uponor and Zurn (the latter is responsible for the Twins' new field). The technology is the same that landscape architects use when keeping small spaces warm, according to Andy Russell, director of sales and marketing for Zurn.

Zurn has also started to sell systems to golf courses (to keep greens from forming dangerous dew) and to large greenhouses to promote plant growth. Other, newer uses include snow melting on roofs or keeping outdoor gathering areas free of snow and ice (such as waiting/seating areas or smoking areas). Choosing a hydronic system is the only way to go, says Russell, because it is infinitely more reliable and efficient, with a longer anticipated life, than the electric coil system or forced air only.

Jeff Wiedemann, product manager for Uponor, which did the Lambeau Field renovation and the Chicago Bears' systems, among others, says that using PEX tubing for hydronic systems is a cheaper method for delivering heat and has a longer shelf life than older versions. He notes that there is less "waste heat" in the radiant systems than electric. Plus, the life expectancy of PEX-tubed systems has risen to 25 years.

No matter the application, quality components—especially at the point of connection—will reduce maintenance, says D. A. Hogan's Anderson. Good tubing and connectors are one thing, but pump size for quickly cycling fluid through the boiler is also critical. Wiedemann agrees that tubing and connectors are critical. "Select a quality tubing that provides a long service life and track record," he says. "Less maintenance means less obstruction to use of the field." Since most systems use glycol—which kills grass—to keep their water from freezing, leaks will have significant impact.

Professional Sports Stadiums with Turf Heating Systems

Hydronic Heating

BASEBALL

- **Target Field (Minnesota Twins), Minneapolis, 2009, grass turf**

FOOTBALL

- **FedEx Field (Washington Redskins), Washington, D.C., 1997, grass turf**
- **Cleveland Browns Stadium, Cleveland, 1999, grass turf**
- **Heinz Field (Pittsburgh Steelers), Pittsburgh, 2001, DD Grassmaster turf**
- **Invesco Field (Denver Broncos), Denver, 2001, heating, grass turf (electrically heated practice field)**
- **M&T Bank Stadium (Baltimore Colts), Baltimore, 2003, synthetic Sportexe Momentum Turf**
- **Soldier Field (Chicago Bears), Chicago, 2003, grass turf**
- **Paul Brown Stadium (Cincinnati Bengals), Cincinnati, 2004, synthetic Field Turf**
- **Lambeau Field (Green Bay Packers), Green Bay, Wisconsin, 2007, DD Grassmaster turf (formerly electric heating)**

Forced Air and Combination Heating

BASEBALL

- **Safeco Field (Seattle Mariners), Seattle, 2000, hydronic and forced air, grass turf**
- **Citi Field (New York Mets), New York, 2008, forced air only, grass turf**

FOOTBALL

- **Lincoln Financial Field (Philadelphia Eagles), Philadelphia, 2003, hydronic and forced air, DD Grassmaster turf**

Electric Heating

BASEBALL

- **Coors Field (Colorado Rockies), Denver, 1995, grass turf**



Lincoln Financial Field, Philadelphia

COURTESY ZURN

With the variety of uses for heating systems, Populous's Smith says his emotional tie to baseball played on natural grass was as good a reason as any to choose a heating system. "For me, it was satisfying to design with grass," he says. "FieldTurf has a wonderful place in life, but not in baseball. The ball bounces badly and it looks funny indoors with light. When it comes to baseball, the game is to be played on grass." The heating system made that a viable option in Minneapolis. Nobody needed to be convinced of that. Like Smith, landscape architects now have more options in cold-weather locales. And that should heat up design opportunities. LAM

Tim Newcomb is a newspaper editor and freelance magazine writer living in western Washington.



COURTESY TREASURE ISLAND COMMUNITY DEVELOPMENT. RENDERING BY CMG LANDSCAPE ARCHITECTURE

AMERICA'S ECOCITY

An ambitious master plan for San Francisco's Treasure Island aims to replace the former naval base with a sustainable, transit-oriented community. Will the actual development be as "green" as the plans? By Daniel Jost, ASLA

"WITHIN A CENTURY, Treasure Island, this place we are right now, could be completely underwater," declared Arnold Schwarzenegger in a speech last December. This small man-made island in the middle of the San Francisco Bay is often used to symbolize the perils of global warming.

So it goes without saying that any plan for new development here would have to address the possibility that glaciers will melt and sea levels will rise. It would have to make sure new buildings are not subject to a 100-year flood, either today or 50 years from now. But a thoughtful new master plan for Treasure Island goes beyond that. It proposes a community that is a model of sustainability—of the sort of living that may actually prevent the most serious climate change scenarios from becoming a reality.

High-profile "ecocities" or "ecotopias" have been proposed in a number of foreign countries. William McDonough + Partners' plans for Huangbaiyu in Northern China, Arup's plans for Dongtan Eco-City in Shanghai, and GCLA's proposal for "Food City" in Dubai spring to mind. But there are very few proposals in the United States that look at development in such a holistic way.

Here, buildings are often certified as "sustainable" with no consideration for how they fit into the surrounding context or how that context will affect their greenhouse gas emissions. Some are located on valuable farmland in a far-flung suburb that can only be reached by car. Some are technically sustainable, but their designers neglect to consider how people will feel in the spaces they create, so they could face the wrecking ball long before their materi-





A plan by Skidmore Owings & Merrill, CMG Landscape Architecture, and Perkins+Will (among others) would transform Naval Station Treasure Island, *right,* into a walkable, transit-oriented community, *here.*

INSET COURTESY TREASURE ISLAND COMMUNITY DEVELOPMENT

als wear out. Then, there are the hoity-toity mixed-use developments where you can comfortably walk from your home to various shops and services—but only if you can afford to live there, and most of the service sector employees who work there cannot.

Treasure Island is supposed to be different. Its master plan is not only rooted in technical ideas about sustainability but in many of the social ideas expressed (but rarely implemented) by the New Urbanists—such as mixing people of different income levels in the same neighborhood. The development is not located on virgin land, far from the city. Instead, it repurposes an old naval base—486 acres just a stone's throw from downtown San Francisco. It will be designed to encourage walking and mass transit. It will be powered by solar panels and windmills integrated into the architecture. It will be drained through bioswales and stormwater wetlands. And at the center of it all, there are plans for growing vegetables.

How did the plan for Treasure Island come to be so progressive? The unusually large scale of the project and the poor state of the existing roads and buildings gave the planners a rare opportunity to completely rethink the island's infrastructure. Also, since the land is owned by the government, planners could offer the land to developers at a price below the market rate. In exchange, the developers will agree to certain contractual obligations that will serve the public, including building parks and transportation infrastructure, applying sustainable building codes, and providing housing for people who make less than the median income.

While other, more utopian plans have surely been drawn up, the master plan for Treasure Island is significant because it is not just the fruit of one person's imagination; rather it is the product of more than 15 years of planning within both the public and private sectors. A team of architects, landscape architects, planners, and engineers has carefully studied the opportunities and constraints of the site and continues to weigh what is and is not feasible here. A variety of voices from the community have also been heard—in fact some have called it the most publicly vetted project in San Francisco history.

But many other so-called ecocities have failed to live up to their initial promise. Additionally, the current recession has stalled many smaller, less-ambitious developments. Will Treasure Island be able to live up to all the hype?

Building Critical Mass

Naval Station Treasure Island included all of Treasure Island—a landmass built of sandy fill dredged from the San Francisco Bay—and the western half of Yerba Buena Island. (The two islands are connected by a narrow, constructed isthmus.) When the naval base closed in 1997, the city set up the Treasure Island Development Authority to oversee

redevelopment and take responsibility for any new public lands created. Some of the old apartment units, where the servicemen and their families lived, were rented out temporarily. Others were provided to previously homeless people through a program called the Treasure Island Homeless Development Initiative.

To make sure the planning process would produce a buildable solution, the government decided to partner with a master developer from the private sector. So for the past 10 years, the city has been working closely with Treasure Island Community Development (TICD), a partnership between Lennar Homes, Kenwood Investments, and, more recently, Wilson Meany Sullivan, a San Francisco-based developer that specializes in urban infill.

Over the years, TICD has assembled a large team of consultants to come up with plans for reusing the site. The latest plan, which has undergone few major changes to its physical form since December 2005, grew out of collaborations between architects from Skidmore, Owings & Merrill (SOM), landscape architects from CMG Landscape Architecture, and planners from SMWM (now Perkins+Will). Sustainability consultants from Arup and a variety of other architects and engineers have worked in specialized roles to elaborate on the plans, and, at the city's request, the plan was peer reviewed by William McDonough+Partners.

In many ways, the island is a real estate developer's dream. "We have some great assets to work with," says Keith Orlesky, design director at Wilson Meany Sullivan. "The views are among the very best views one could hope to find in the country." The site is also close to downtown San Francisco, "a place that has consistently shown, even in this [economic] downturn, that people want to live there," Orlesky explains.

Yet the site also presents many challenges. One of the most significant challenges from a development perspective is its isolation. The only way to reach Treasure Island by car is by crossing the Bay Bridge, which is heavily congested during peak hours. A lack of adjacent development is a blessing when trying to get a project through the review process, but it can be problematic when trying to make it work financially. There are no immediate neighbors to help support stores, restaurants, and public transportation—all of which require a certain amount of critical mass to make them feasible.

An early plan by some of the same consultants, released in 2002, had a New

Responding to Rising Sea Levels

SEA-LEVEL RISE is one area where the plan will definitely have to adapt as new information becomes available. The actual amount of rise is very difficult to predict, and some scientists, including James Hansen, director of NASA's Goddard Institute for Space Studies, have said that even the existing estimates are too conservative.

While the development on Treasure Island is set to be sustainable, it is not gambling that all other development in the coming years will follow suit. Precautions are being taken in case sea levels do rise as predicted. According to a report by the engineering firm Moffat & Nichol, the 100-year high tide for Treasure Island, the point to which waters might rise during a storm surge, is estimated to be 9.1 feet above mean sea level. The perimeter elevation of Treasure Island currently ranges from 10 to 14 feet, and parts of the island are as low as six feet.

Treasure Island Community Development plans to set all buildings, streets, and parking garage entrances at 36 inches above the current 100-year high tide, and finished floor elevations would be six inches higher. The perimeter improvements and the stormwater plan they've proposed would accommodate a 16-inch sea-level rise without any alterations.

Pumps would be required during high tide if sea levels rose any higher. To avoid costly renovations, the pipes needed for this system will be installed as part of the initial development.

If sea levels rise more than 36 inches, a variety of different strategies could be undertaken to adapt to this change. The parks surrounding the island are quite wide, and small levees or berms could easily be added within most of these areas to protect the development. Seawalls could be used where there is less space. Kevin Conger, ASLA, of CMG Landscape Architecture says sections of the park could even be influenced by the tide in the future, creating new tidal wetlands or beaches.

Sea-Level Rise Predictions

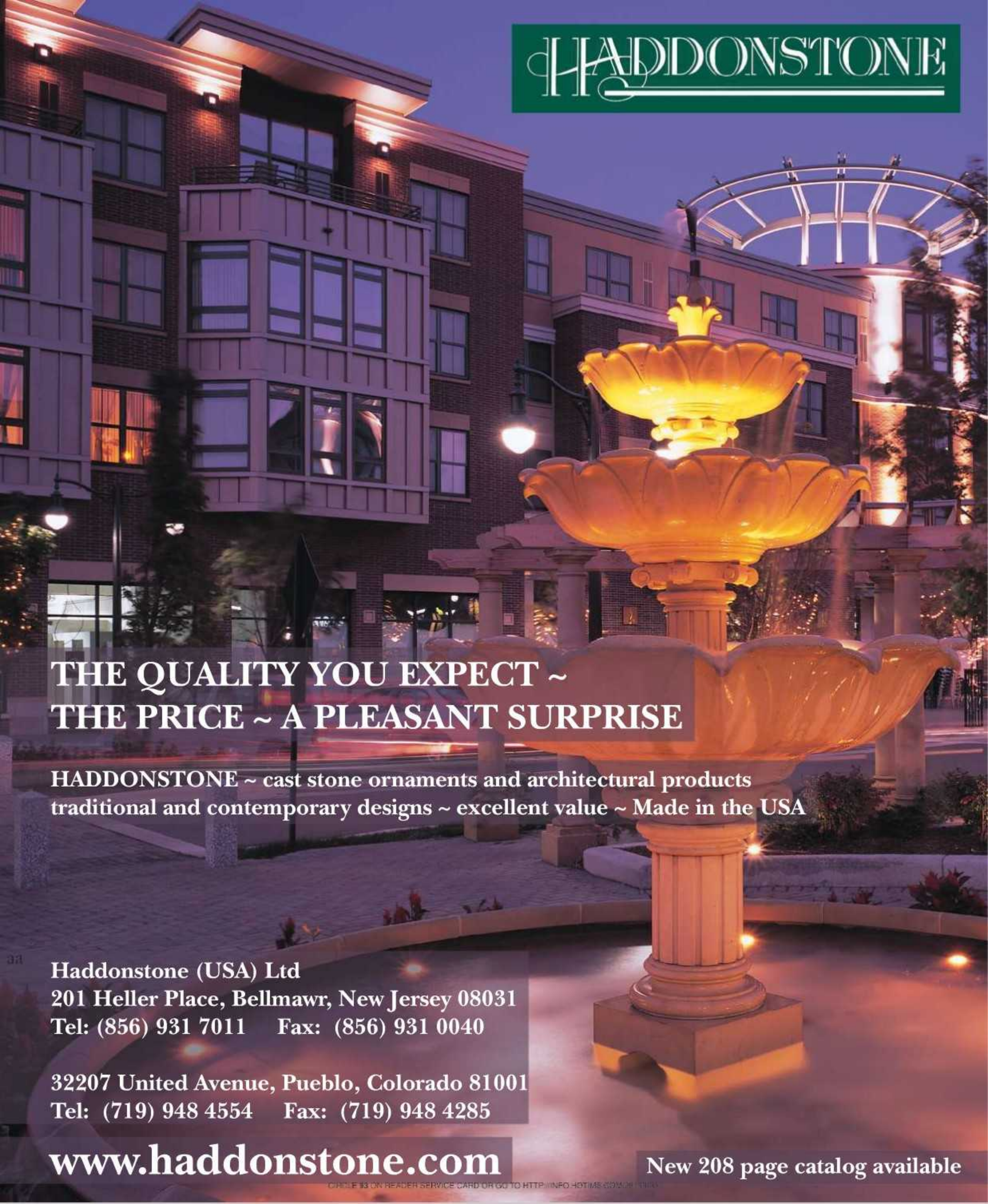
Intergovernmental Panel on Climate Change, 2007:
0.6 meters or more (around 2 feet) by 2100

State of California Climate Change Impacts Assessment, 2009:
12-18 inches by 2050
21-55 inches by 2100

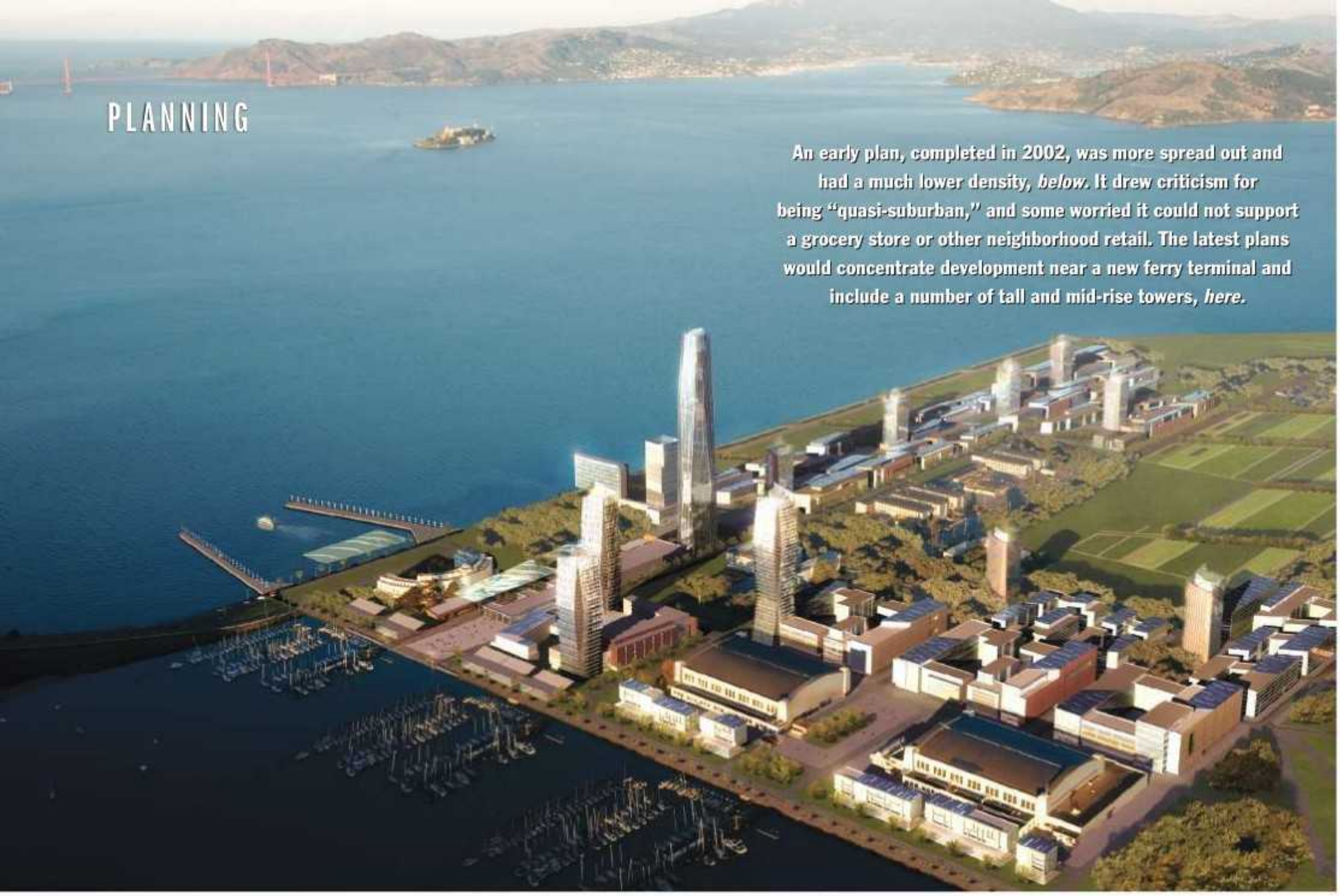


A waterfront park facing San Francisco would have an average width of 350 feet, providing room to develop levees if sea levels rise.

COURTESY TREASURE ISLAND COMMUNITY DEVELOPMENT. RENDERING BY TIM WELLS



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An early plan, completed in 2002, was more spread out and had a much lower density, *below*. It drew criticism for being "quasi-suburban," and some worried it could not support a grocery store or other neighborhood retail. The latest plans would concentrate development near a new ferry terminal and include a number of tall and mid-rise towers, *here*.

Urbanist feel with a series of attached town houses spread over much of the island. John King, the urban design critic for the *San Francisco Chronicle,* called it "quasi suburbia." Some voiced concerns that the 2,800 residential units it proposed would not be enough to create a vibrant neighborhood and that residents would have had to drive over the Bay Bridge just to go to a grocery store.

Among San Franciscans attending public meetings, there was strong support for a sustainable, transit-oriented development that was not just a bedroom community for San Francisco and Oakland. And they were willing to accept more density to achieve this. "The public was pretty supportive of the idea of getting some tall buildings in there, which we were surprised by," says Kevin Conger, ASLA, a founding partner at CMG.

SOM, which has a strong track record for high-rise design, was added to the planning team in 2005. In the latest plans, the development has a much smaller footprint, but the number of residential units has nearly tripled. At build out, the new development is expected to house around 15,000 people on 90 acres of land. Treasure Island will have shops, restaurants, hotels, a school, a police and fire station, and a variety of residential options. A number of towers, including an iconic skyscraper 60 stories tall, are planned for the site. The towers are not set in their own individual "parks," like a midcentury housing project; rather they relate to the street and create space. The entire development is surrounded by parks, recalling the clear city–country divide of an Italian village. In all, the plan will create 300 acres of new parkland, an area one-third the size of Golden Gate Park.



COURTESY TREASURE ISLAND COMMUNITY DEVELOPMENT. BOTH: TOP RENDERING BY D-BOX. BOTTOM RENDERING BY CMG LANDSCAPE ARCHITECTURE





"Three hundred acres is a lot of open space for 15,000 people," notes Conger. "There are not enough people to really activate and become stewards of that much open space." So the parkland is being planned as a regional, possibly national, attraction. It will have a variety of distinct experiences—a sculpture garden, wetlands, baseball and soccer fields, and a 20-acre organic farm.

Working with an Artificial Island

The island's isolation wasn't the only challenge. The fact that it isn't a natural landform has presented a number of challenges as well. One of the development team's earliest obstacles was California's Tidelands Trust Act, which prohibits most types of new development on tidal lands filled after 1900. Under this law, private development on Treasure Island, which was created in the late 1930s, would have been prohibited. The purpose of the law is to prevent developers from filling coastal wetlands, which serve as important breeding grounds for fish and birds. But Treasure Island hasn't been a pristine natural habitat for nearly seven decades, so the city and the development team worked with the state legislature to pass a special law allowing them to develop 90 acres on Treasure Island in exchange for preserving 90 acres of land on Yerba Buena Island (a natural island) and improving its value to wildlife. Willet Moss, Affiliate ASLA, another partner at CMG, is leading a team of biologists on the habitat management plan for Yerba Buena Island.

Treasure Island also presented engineering challenges. The fill is sandy and in some places very deep, so there were concerns about liquefaction during an earthquake. An earthquake can cause poorly packed sand with a high water content to act like a liquid and lose its ability to support buildings. Many San Franciscans still remember the 1989 earthquake, when liquefaction caused major damage to San Francisco's Marina



Sharing the Road with Pedestrians

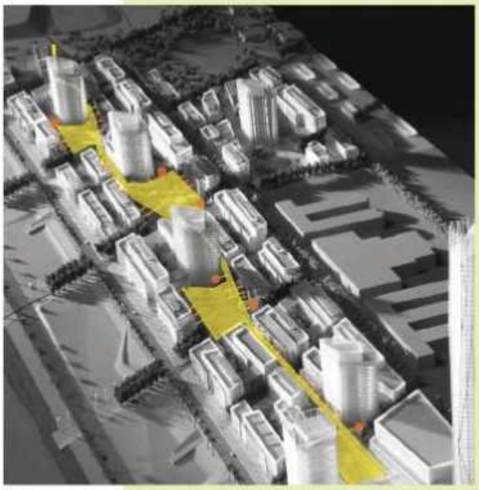
TO ENCOURAGE WALKING AND MASS TRANSIT, CMG Landscape Architecture has put a lot of thought into how pedestrians will feel on Treasure Island. Pedestrians exploring the neighborhood or coming home from the ferry will probably walk along the water or stroll down one of the new shared public ways. What's a shared public way?

"It's a lot like a *woonerf,*" says CMG founding partner Kevin Conger. "It's a curbless street where cars will yield to pedestrians." Woonerf is a Dutch term describing a street where cars are allowed but pedestrians and cyclists have priority. They are usually narrow, winding roads with textured pavements meant to discourage people from building speed. On Treasure Island, the speed limit on these streets will be 10 to 15 miles per hour. There are no garages or driveways facing the street, but residents will have the ability to pull up to their front door and park temporarily to drop off groceries or pick up an elderly person.

When the team began planning the streets, this wasn't an "allowable" public street type in San Francisco. However, the planners did not want these streets to become private property. The city had been discussing a similar street type for some of its alleyways, and with the political momentum behind the Treasure Island project, it was able to create a new standard.

"I think the biggest issue will be to work with the mayor's Office of Disability to make sure it will be safe for people who are disabled," says Conger. "The challenge is if a person has a visual disability, how do they know if a car is coming and whether they are in the middle travel lane? With hybrids, maybe they can't even hear them. So, we are proposing an area on the side of the road with visual contrast and tactile differentiation so you know when you're over to the side." In CMG's renderings of the shared public ways, there is not necessarily a material differentiation between pedestrian and nonpedestrian areas—it's not just a sidewalk at grade—rather there is a subtle band of textured paving, plantings, or a seat wall that marks an area that is exclusive to pedestrians.

American designers tend to be skittish about mixing different modes of transportation, but Conger notes that there are a lot of spaces where pedestrians and vehicles mix without any problem, like a parking lot or the many suburban neighborhoods where kids take over the street to play roller hockey.



The landscape architects worked with the city of San Francisco to create a new type of road that's curbless, where cars will yield to bicyclists and pedestrians, *top* and *left*. More open space than street, these "shared public ways" are similar to woonerfs, which have become popular in the Netherlands.

COURTESY TREASURE ISLAND COMMUNITY DEVELOPMENT. BOTH: TOP RENDERING BY CMG LANDSCAPE ARCHITECTURE; BOTTOM IMAGE BY SOM











District, so there has been a great deal of public attention focused on this issue.

Steps will have to be taken to secure the island before any new development can begin. Engineers at Treadwall & Rollo came up with recommendations for strengthening the island's edge. Extra attention will be given to compacting the land that the roads and structures sit on.

The island's geotechnical issues have also played into the debate over the density of the development and where on the island it would be located. The natural substrata favored developing taller buildings closer to Yerba Buena Island, where the native bedrock is closer to the surface, says Craig Hartman, an architect at SOM.

Working with the Local Climate

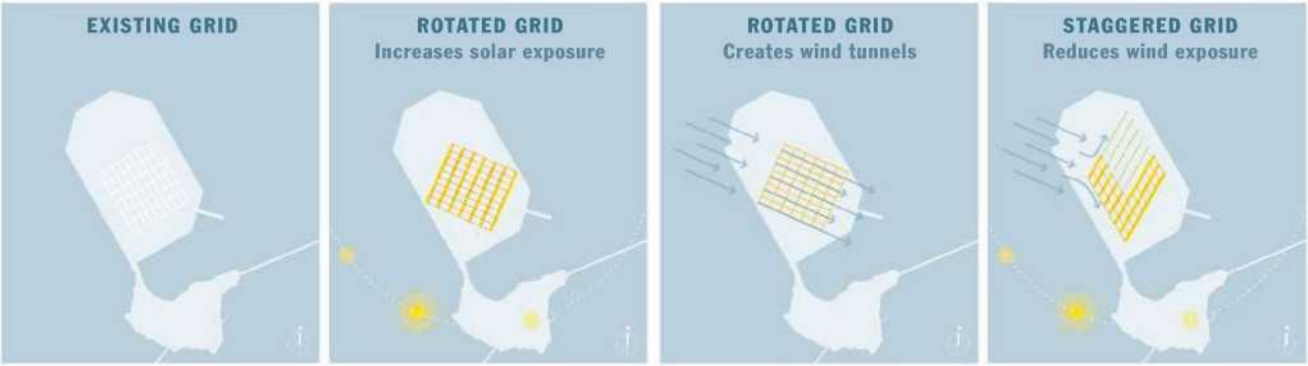
A 36-acre Jobs Corps campus near the center of the island was off-limits to the planners and will remain unchanged. However, very little of what exists on the island today will be retained—not even the streets. Most of the asphalt will be ground up, recycled, and relocated.

Perhaps most notable in the master plan is the street grid. The unusual diagonal arrangement responds to the strong winds that blow over the island, bringing large banks of fog during the summer months. "To make it habitable and comfortable, we needed to find a way to minimize the wind in public spaces and maximize the level of daylight," Hartman explains.

"In America, our cities are almost all based on the Cartesian grid, and that's not necessarily the best way to respond to climate," says Hartman. The planning team used data from the navy's wind-monitoring stations to determine the direction of the prevalent winds and designed the secondary streets so that buildings would block the wind—so the streets wouldn't become wind tunnels. Hartman drew inspiration from small towns he visited around Lake Como in Italy that are similarly adapted to the wind.

Windrows, the lines of trees and shrubs that farmers use to protect their crops, were also an inspiration. This idea is reflected quite literally where the diagonal streets meet the park and the allée of street trees continues into the open space. Buildings are also used as "windrows" within the neighborhoods themselves. The team has proposed midsized residential towers placed where they could shelter small public squares. To encourage sunshine within these squares (and passive solar heating of the towers), lower buildings are placed along the square's southern edges. But the design is not only about blocking the wind. In certain places, it's about celebrating the wind. "The northern shoreline, with its large landforms, will allow you to be up in the wind, to experience it," says Conger.

To design the site, the team constructed a digital model to analyze sun and wind



To prevent liquefaction during an earthquake, much of the island, which was built in the 1930s, will need to be recompacted. This enabled the planning team to redesign the entire street system using a staggered grid that increases solar exposure while reducing wind exposure, *above*.

COURTESY TREASURE ISLAND COMMUNITY DEVELOPMENT. BOTH: TOP RENDERING BY D-BOX; BOTTOM DIAGRAM BY SOM



patterns, and they plan to test the design by placing a physical model in a wind tunnel.

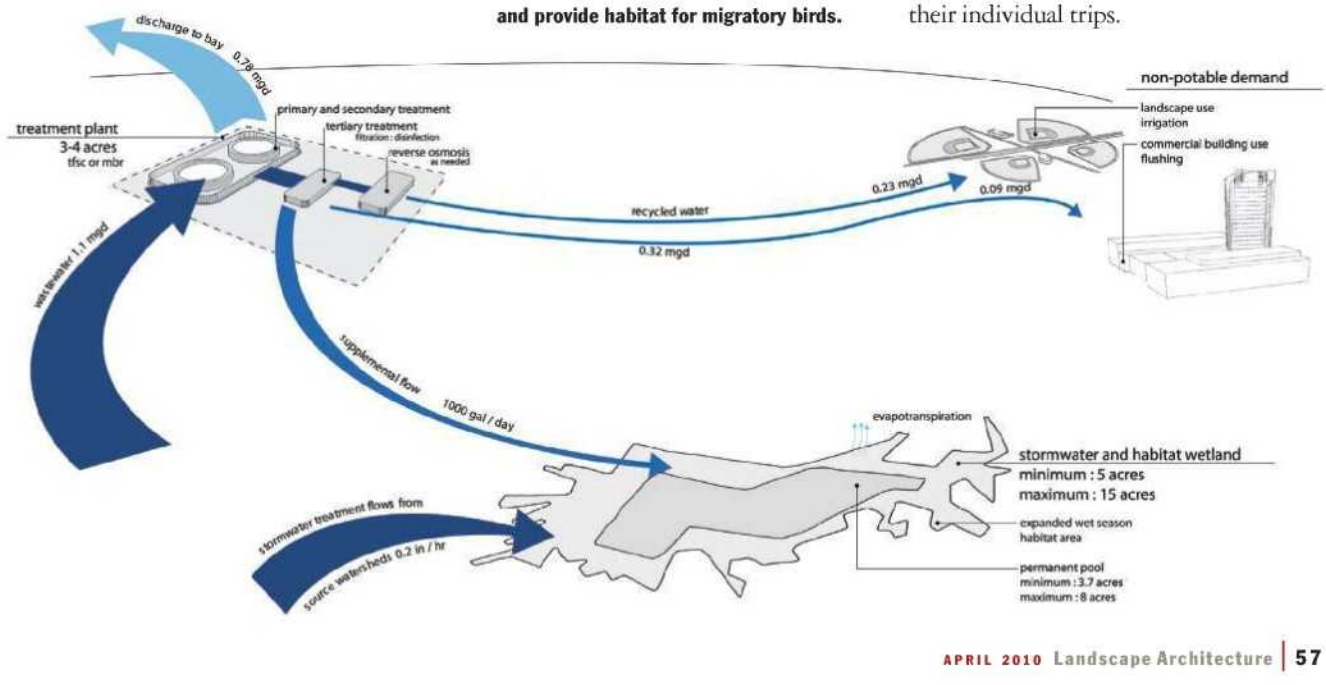
A Sustainable Community

"Prioritizing pedestrians, bicycles, and mass transit over auto use is a key principle that's come out of the public planning process," says Michael Tymoff with San Francisco's mayor's office. To accomplish this, the plans locate 90 percent of the residential units within a 15-minute walk of a new ferry terminal. The tallest towers will be only five to 10 minutes away. Originally, plans called for locating the ferry terminal at an old pier on the east side of the island; however, the latest plan calls for a new, $20 million terminal on the island's southwest corner, which will provide a more intuitive link to San Francisco, shorten the ferry ride, and integrate a historic airport terminal into the arrival experience.

The terminal will be transformed into a retail corridor along with two old airplane hangars nearby. Near the terminal, there are plans for an outdoor marketplace with an overhead structure covered with translucent, photovoltaic panels. Planners are hoping this area will draw tourists and residents from Oakland and San Francisco, that people will catch the ferry from downtown, eat dinner on Treasure Island, and take a stroll in the park as the sun sets behind the San Francisco skyline.

Though the plan does not eliminate automobile use entirely like some ecocities, many of the roadways on the site will be designed primarily for pedestrians, with low speed limits and no garage or driveway access (see "Sharing the Road with Pedestrians," page 54). The project team is studying various policy ideas, such as a congestion tax, which would charge cars to enter and exit the island during peak times. And to help make transit more viable, they are considering a mandatory ferry user fee that would apply to everyone living on the island rather than charging residents for their individual trips.

The development will be surrounded by a 300-acre park, *top*. The diagram *below* is one of the concepts under consideration for how water will be recycled. A wetland will treat much of the stormwater that falls on the island and provide habitat for migratory birds.



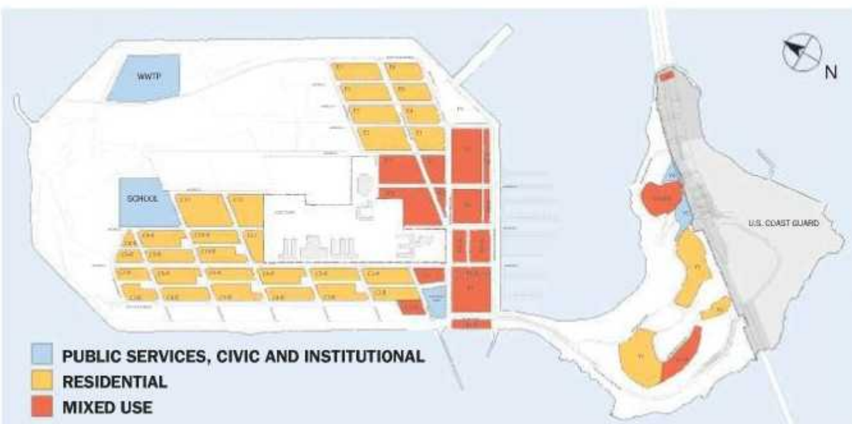
COURTESY TREASURE ISLAND COMMUNITY DEVELOPMENT. DIAGRAM BY CMG LANDSCAPE ARCHITECTURE

The project plans to use clean forms of energy. Planners say 60 to 70 percent of the buildings' roofs will be designed to accommodate solar panels, and the south sides of new towers will be covered in transparent, photovoltaic skins.

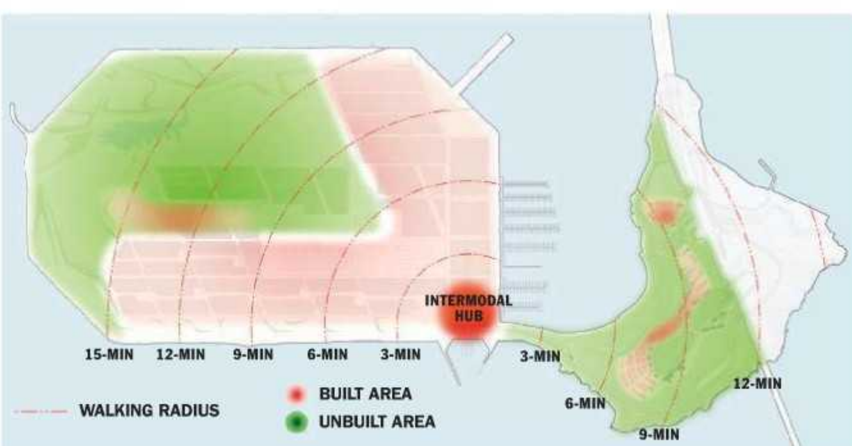
Wind power is also being considered. Though large wind turbines would seem like a viable option, given the island's windy nature, it is located on a major bird flyway. So, smaller vertical axis turbines may be an appropriate alternative, according to Jean Rogers, a sustainability consultant with Arup.

There is a strict sustainable building code, developed specifically for the site. Stormwater will be managed sustainably through a series of bioswales and constructed wetlands. A small sewage treatment facility will provide graywater to irrigate the farm, and food scraps and grass clippings will be composted on site for use as fertilizer for the farm.

One of the most interesting things about Treasure Island is how much effort has gone into analyzing the development's environmental footprint. Often, designers say their work will reduce greenhouse gas emissions or increase permeability, but rarely do they quantify how much. Currently, 64 percent of the surfaces on the island are impermeable. That will shrink to 39 percent under the new plan. Sustainability consultants at Arup have estimated that the use of clean technologies, the drop in energy demand and auto use, and the natural sequestration in newly planted areas as specified in the master development agreement will reduce per capita carbon emissions from 7,740 to 3,030 pounds per person per



At build out, Treasure Island will have shops, restaurants, a school, a police and fire station, and a variety of residential options, *above.* Thirty percent of the residential units will be available to people who make less than the median income and 90 percent of the units will be within walking distance of an intermodal transit hub with ferry and bus service, *below.*



COURTESY TREASURE ISLAND COMMUNITY DEVELOPMENT. BOTH; TOP PLAN BY CMG LANDSCAPE ARCHITECTURE; BOTTOM PLAN BY SOM

CMG Is Pushing Sustainability

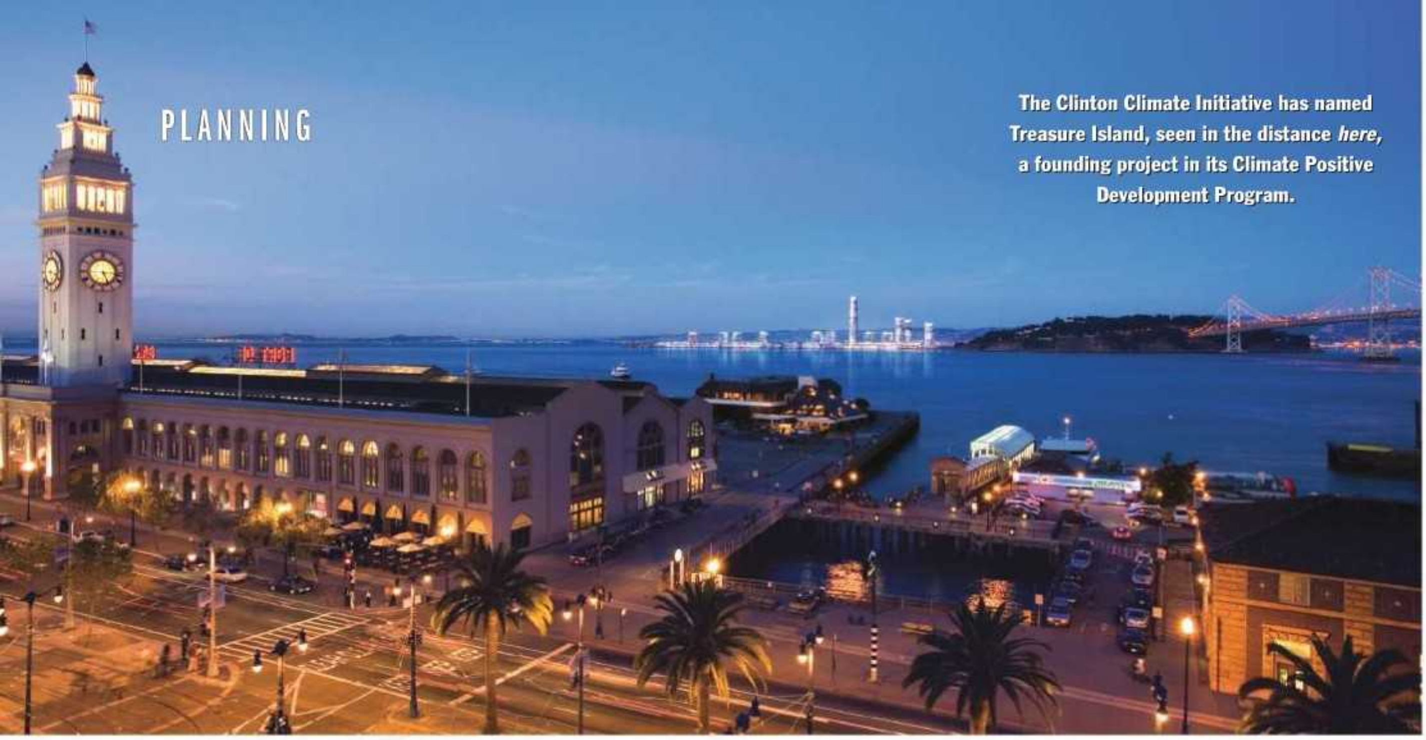
KEVIN CONGER, ASLA; Willet Moss, Affiliate ASLA; and Chris Guillard, ASLA, founded CMG Landscape Architecture in San Francisco in 2000. Lately, the firm's knack for eye-catching, sustainable design has been turning heads.

CMG recently netted two honor awards from ASLA (see "2009 ASLA Awards," *Landscape Architecture,* August 2009). Its award-winning design for the Crack Garden used jackhammers to transform an old concrete pad into a welcoming garden with stripes of herbaceous vegetation. The project stood out as a low-budget solution for recycling a concrete pad while increasing its permeability.

CMG's design for the Panhandle Bandshell was also unique. The band shell was created as an "open source" public stage where anyone could put on a performance. The temporary structure was made using a variety of recycled materials. The roof of the band shell was a patchwork of car hoods of various colors. The back wall was built using 3,000 plastic bottles, and old circuit boards were used to accent the interior.

CMG's work on Treasure Island has allowed the firm to apply its ideas about sustainability on a much larger scale. Landing a position on the planning team was a major victory for the young firm. However, Conger, who leads the project within the firm, was no stranger to large-scale land planning: As a landscape architect at Hargreaves Associates, he traveled to Sydney to help craft the master plan for the 2000 Summer Olympics.

Keith Orlesky of Wilson Meany Sullivan says Conger has encouraged the team to think about larger systems. He has been an important advocate for developing the plans in a way that is in harmony with the surrounding environment, for creating plans that are truly sustainable and not just greenwashing. "He's been a steward of the principles," says Orlesky. "It's very easy to lose sight of some of these things. Kevin is very articulate [in explaining] those principles and why we need to pay attention to them. He draws compelling pictures of what might be and gets everybody inspired."



The Clinton Climate Initiative has named Treasure Island, seen in the distance *here*, a founding project in its Climate Positive Development Program.

COURTESY TREASURE ISLAND COMMUNITY DEVELOPMENT. RENDERING BY D-BOX

year. Partnerships with third parties could lower those emissions even further by producing a significant amount of renewable energy on site.

The language of the plan is meant to keep this project at the forefront of sustainability as the site is developed. "We want to allow this island to evolve over the next 25 years and harvest new technologies as they evolve," says Hartman.

The long-term goal is to be carbon neutral. Last year, Treasure Island was selected

Sustainability consultants at Arup have estimated that the development will reduce per capita carbon emissions from 7,740 to 3,030 pounds per person per year. The long-term goal is to be carbon neutral.

as a founding project of the Climate Positive Development Program, a partnership between the Clinton Climate Initiative and the U.S. Green Building Council that is advocating for carbon neutral development to prevent climate change.

Will It Live Up to the Hype?

Plans for Huangbaiyu and Dongtan Eco-City received a great deal of positive press when they were first introduced. But as Christina Larson noted last year in *Yale Environment 360*, neither of these plans has lived up to expectations so far. Will the plans for Treasure Island meet a similar fate?

In her article, Larson suggests that part of the reason many of the key sustainable ideas at Huangbaiyu were missing from the final project was the lack of buy in within the local community—that the plan was shaped by outside experts and never really embraced by local politicians or citizens. After countless public meetings involving many stakeholders, this shouldn't be a problem in San Francisco.

But will the cost of making the project sustainable be too overwhelming? "There's a perception that sustainability is expensive," says Arup's Rogers, "that everyone starts with good intentions and things get value engineered out." But she says that is becoming less of an issue.

"We've seen alternative financing mechanisms that make these things possible," Rogers says, such as the Energy Service Company model, under which a third party will finance photovoltaics or energy-saving upgrades that require a major capital investment up front, then the building owner or its occupants pay over time as energy is produced or cost savings are realized. Rogers says all the major photovoltaic producers now offer this sort of financing model and many of the bankers laid off during the recession have been starting companies within this niche. This helps resolve a much-talked-about problem—that developers are often unwilling or unable to pay large costs up front, even when this initial down payment will save money over the project's life cycle.

"There are third parties not just for energy, but for water [treatment], for solid waste—all of which we are exploring," says Rogers. To manage their waste, they are in talks with a company called Trans Vac Systems to build and operate an automated vacuum collection system—a series of pipes with vacuum pressure that would carry trash and recyclables to a central facility. This system could make composting and recycling much more convenient. Whether or not it will offer a net environmental benefit is unclear, but it would definitely add a wow factor to the project. It also has the potential to improve the local ambience and air quality. "It gets all the

diesel collection trucks off the streets," says Rogers. "It gets the trash off the streets." Rogers notes that the technology has been used successfully in a number of European cities, but in America it has been limited mainly to hospitals (for medical waste) and hotels (for linens), partially because retrofitting the system within an existing neighborhood would be expensive.

"I think what's unique to Treasure Island is this [sustainability] plan is not just a plan," says Rogers. "It's actually 'exhibit K,' part of a legally binding commitment to achieve sustainability, which there are legal and financial penalties for not achieving."

As part of the agreement, TICD is legally required to build stormwater wetlands that will handle the island's stormwater flows. It is required to construct a central recycling and composting facility that will handle food waste. It is required to provide 5 percent of the island's electricity using clean energy (third parties are expected to increase that percentage dramatically) and provide $1.8 million for wind turbines. TICD is required to meet the new green building code and participate in the LEED Neighborhood Development Program—using "good faith efforts" to achieve a platinum rating.

"This [sustainability] plan is not just a plan; it's actually part of a legally binding commitment to achieve sustainability."

The developer is also required to provide affordable housing on site, which will allow many service sector workers to live closer to home. Approximately 1,800 units, 30 percent of all residential units built on the island, will be new, affordable housing. Fifteen percent of all housing will be "inclusionary units," which means they will be integrated into the same buildings as the market-rate units. And 435 units will serve formerly homeless people through the Treasure Island Homeless Development Initiative.

"I've worked on a lot of projects and I haven't seen that level of detail—where sustainability has been so embedded into the governing mechanisms of the build out," says Rogers.

The development authority and TICD agreed on the terms in February 2007. Last December, the project passed another major hurdle when the navy and the city announced an agreement to turn over the land to the local development authority. The environmental impact report will be released soon, and if all goes well, TICD hopes to begin infrastructure work in 2011.

There are still obstacles to overcome. It is estimated that TICD will have to invest around $1.2 billion for infrastructure before any new units are built. There are still questions about phasing—what the exact mix of uses will be and how much can be developed at once. Wilson Meany Sullivan's Orlesky notes that individual devel-

opment projects have gotten smaller in the past few years, as the country has dealt with the recession, and if the market doesn't fully recover, some of the towers may have to be smaller than originally imagined.

Also, the current development agreement would provide only the most basic infrastructure within the parks. To achieve the level of park amenities proposed by CMG, alternative funding will have to be found—probably through a philanthropic campaign managed by a conservancy.

But TICD, which has spent a lot of time and money on planning, is intent on making this work. "The last thing I want to win is a design award for a bunch of plans," says Orlesky. "I want to win a design award for a built place." LAM

Resources

- "China's Grand Plans for Eco-Cities Now Lie Abandoned," by Christina Larson; *Yale Environment 360,* April 6, 2009. Available at *www.e360.yale.edu/content/feature.msp?id=2138.*
- Master Development Submittals for Treasure Island, *www.sftreasureisland.org/index.aspx?page=26.*

For more on sea level rise and how it might affect Treasure Island:

- The Intergovernmental Panel on Climate Change Fourth Assessment Report: Climate Change 2007, *www.ipcc.ch/publications_and_data/ar4/syr/en/contents.html.*
- "Power Failure," by James Hansen; *Newsweek,* December 4, 2009. Available at *www.newsweek.com/id/225529/page/2.*
- San Francisco Bay Conservation and Development Commission (Pre-Application Review), *www.bcdc.ca.gov/meetings/drb/2010/02-08_Treasure_YB_islands.pdf.*

PROJECT CREDITS **Master developer:** Treasure Island Community Development LLC (Lennar Homes, Wilson Meany Sullivan, Kenwood Investments), San Francisco. **Public oversight:** Treasure Island Development Authority and the Mayor's Office of Economic and Workforce Development, City of San Francisco. **Urban design/land planning:** Skidmore Owings & Merrill, San Francisco; Perkins+Will (formerly SMWM), San Francisco; CMG Landscape Architecture, San Francisco. **Sustainability consultant:** Arup, San Francisco. **Transportation consultant:** AECOM (formerly DMJM Harris), San Francisco. **Marine engineers:** Moffat & Nichol, Oakland, California. **Retail architecture:** BCV Architects, San Francisco. **Mid-rise residential architecture:** Mithun, Seattle. **Historic rehabilitation consultant:** Page & Turnbull, San Francisco. **Hotel and hospitality architecture:** Hornberger and Worstel, San Francisco. **Civil engineer:** BKF Engineers, Redwood City, California. **Environmental engineer:** CH2M Hill, San Francisco. **Environmental engineer/wastewater systems:** Brown & Caldwell, Walnut Creek, California. **Geotechnical engineer:** Engeo Inc., San Francisco; Treadwell & Rollo Inc., San Francisco. **Hydrology:** Phillip Williams Associates, San Francisco. **Legal counsel:** Gibson, Dunn & Crutcher, San Francisco. **Environmental impact report:** Turnstone Environmental Consultants, Portland, Oregon. **Environmental impact report and habitat restoration:** ESA, San Francisco. **Habitat restoration:** Mike Wood, biologist, San Francisco.



Yucca filamentosa 'Color Guard'

TWO IN ONE

Shrubs with multi-colored foliage can be accents in the garden.

By Marty Wingate

VARIEGATED SHRUBS expand the plant palette in a design. They bring light to dark places and add visual interest for many more months than the flowering season of most plants. The pattern of variegation—thin white leaf margins, bold splashes, or subtle marbling—changes the texture the plant presents from its usual state of dark, medium, or light green.

A shrub's form and the size of its leaves affect the impression its variegation makes. The foliage of *Abelia* x *grandiflora* 'Confetti' lives up to the plant's name as the small pink, cream, and green leaves mass to form a fuzzy visual display of color. The bold green margins and gold centers of *Yucca filamentosa* 'Color Guard' present a sharp outline that the shape of the leaves—spiky and swordlike—reinforces.

Variegated shrubs create a strong contrast to the greenness around them, and they make the most of this when not overdone. Mass plantings of variegated shrubs lose their impact and may end up looking like a snowstorm, but when judiciously chosen and sited singly or in small groups, they provide a heightened appreciation of color and form. Backed by or planted with green companions, the variegation shows off to perfection; surrounded by more variegation, its visual impact weakens.

Variegation can be a matter of taste, especially when it comes to spotted or mottled foliage. To some, the speckled yellow leaves of *Aucuba japonica* 'Goldstrike' or 'Gold Dust' look like fairy lights in the shade; to others, the shrub appears sickly, as if some foliar disease has struck.

Use variegated shrubs throughout the garden as accent or statement. Deciduous or evergreen, shade loving or sun tolerant, selections exist to fit almost any bill.

Made in the Shade

Lighten the darkness, spotlight a particular section of your garden, or mark the beginning or end of a path. Limbing up trees provides more planting space and a feeling of openness, like raising the ceiling. But the light is dim and so including variegated shrubs as understory plants helps to illuminate without the need for electricity. Bold swaths of color on the leaf make a clear point. The wide yellow centers on the leaves of evergreen *Aucuba japonica* 'Picturata' call attention to themselves from a distance, and the size of the shrub—up to six feet high and wide—adds to its strong impression.

A few variegated selections show up in the long list of bigleaf hydrangea *(Hydrangea macrophylla)* cultivars. Variegated hydrangeas are not the most prolific bloomers, but the

JERRY PAVIA, ALL


Hydrangea macrophylla 'Mariesii Variegata'

trade-off may be worth it, because their large leaves are eye-catching. The lacecap selection 'Mariesii Variegata' (sometimes also called 'Maculata') shows clean white edges around green, with some new growth beginning mostly white before the green emerges. Broad cream and yellow edges mark the foliage of 'Lemon Wave,' also a lacecap.

Because *Hydrangea macrophylla* blooms on old wood (the exceptions being selections marketed as the Endless Summer collection), their flowering is iffy in cold climates where the shrub may freeze to the ground and have only new growth every year. This makes variegated foliage the only ornament; it may not be the best replacement for flowers, but it does remove the worry over whether the flowers will be blue (in acid soil) or pink (in alkaline soil).

Marbled foliage in the shade, such as that of the variegated drooping fetterbush (*Leucothoe fontanesiana* 'Rainbow') should be kept close by to be admired; distance only lessens its impact. Be careful near paths, though. The form of the shrub is low and arching—it doesn't want to be kept under control. Its leaves are long and narrow and mottled pink, cream, and bronze; the colors seem to drip down the leaves. Its variegation isn't sharp, but soft and dreamy. It can create a skirt from which tree trunks emerge like pillars.

On the Sunny Side

In sunlight, variegation dances and creates good contrasts with nonvariegated plants or against solid hedges and fences.

The abundance of *Abelia* x *grandiflora* cultivars with variegated foliage show the ease at which it sports—sends off branches of variously colored leaves that have been selected and propagated to become the aforementioned 'Confetti,' as well as 'Kaleidoscope' with green and white foliage against red stems, and 'Mardi Gras,' green and white plus a pink tint.

Abelia's arching branches form a pleasant, fountainlike structure with clusters of small, funnel-shaped flowers in coppery pink or white. Variegated selections, because of the shrub's small leaves, present a fine visual appeal and look good at close quarters at the edge of walkways, elevated on berms, or as one component in a large pot. It is semievergreen in mild climates.

Variegation takes the commonplace and raises it up. Springtime across much of the country wouldn't be spring without the glaringly cheery yellow blooms of *Forsythia* x *intermedia* (Zones 5–9, 9–6). Forsythias burst on the scene in March and April in a rush to be the first in flower, then fade into what can be truly described as wallflower status. 'Fiesta' changes that: Its leaves show bright yellow centers, fading to green on the margins, against almost red stems. Its small stature should give it a place at the front of borders, where it will hold its own through summer. Viewers will be hard-pressed to identify it as a *Forsythia.*

It isn't unusual for variegated selections to stay smaller than the standard shrub; *Weigela* is another example. Though the standard variety grows to six feet high and


Abelia x grandiflora 'Confetti'


Weigela 'Variegata Nana'


Cornus alba 'Elegantissima'


Cornus alba 'Gouchaultii'

wide, varieties stair-step down in size from Magical Fantasy ('Kolsunn'), with pure white leaf margins, to 'Variegata Nana,' with creamy margins, down to the diminutive 'My Monet,' with foliage a party of pink, green, and cream. All have light or dark pink funnel-shaped flowers in late spring with an additional smattering throughout summer.

Deeper shades show up in variegation, too. Although most plants with dark (black, brown, or purple) leaves are entirely dark, masking the very presence of chlorophyll, some will show two-toned variegation for at least part of the growing season. One of the most popular of the ninebark cultivars *(Physocarpus opulifolius)* is deep, dark, purple 'Diabolo,' but in one of its

Variegated Shrubs

Name	Height x Spread	Comments	Zones (USDA, AHS)
Abelia x *grandiflora* 'Confetti' • glossy abelia	about 3 feet by 3 feet	pink, cream, and green foliage	Zones 6–9, 9–6
Abelia x *grandiflora* 'Kaleidoscope' • glossy abelia	2 feet by 3 feet	yellow, red, and green foliage	Zones 6–9, 9–6
Abelia x *grandiflora* 'Mardi Gras' • glossy abelia	3 feet by 5 feet	green and white foliage	Zones 6–9, 9–6
Abelia x *grandiflora* 'Minipan' (Golden Anniversary) • glossy abelia	1 foot by 3 feet	creamy to golden margins	Zones 6–9, 9–6
Abelia x *grandiflora* 'Panache' (Silver Anniversary) • glossy abelia	1 foot by 3 feet	silver-white margins	Zones 6–9, 9–6
Aucuba japonica 'Goldstrike,' 'Variegata' • gold dust shrub	up to 6 by 6 feet	leaves heavily speckled with yellow	Zones 6–10, 12–6
Aucuba japonica 'Picturata' • gold dust shrub	up to 6 by 6 feet	large yellow center to leaves	Zones 6–10, 12–6
Cornus alba 'Bailhalo' (Ivory Halo) • tatarian dogwood	up to 6 feet high	leaves edged in white	Zones 2–8, 8–1
Cornus alba 'Elegantissima' • tatarian dogwood	up to 6 feet high	wide, irregular white margins with center green	Zones 2–8, 8–1
Cornus alba 'Gouchaultii' • tatarian dogwood	up to 6 feet high	yellow and pink margins	Zones 2–8, 8–1
Cornus alternifolia 'Argentea" • variegated pagoda dogwood	15 feet by 20 feet	wider than tall	Zones 3–8, 8–1
Cornus sericea 'Hedgerows Gold' • red osier	up to 6 feet high	wide golden yellow margins	Zones 3–8, 8–1
Daphne x *burkwoodii* 'Carol Mackie' • variegated daphne	3 feet by 4 feet	fragrant flowers	Zones 4–8, 7–1
Daphne x *transatlantica* 'Summer Ice' • everblooming daphne	4 feet by 6 feet	blooms throughout summer	Zones 6–8, 8–6
Eleutherococcus sieboldianus 'Variegatus' • variegated five-leaf aralia	9 feet by 9 feet	adaptable to many soils	Zones 5–9, 9–3
Forsythia 'Fiesta' • Fiesta forsythia	3 feet by 4 feet	brightest in full sun	Zones 5–9, 9–6
Hydrangea macrophylla 'Lemon Wave' • bigleaf hydrangea	4–6 feet by 4–6 feet	lacecap flowers, leaves broadly edged in yellow	Zones 6–9, 9–6
Hydrangea macrophylla 'Mariesii Variegata' • bigleaf hydrangea	4–6 feet by 4–6 feet	lacecap flowers, white leaf margins	Zones 6–9, 9–6
Leucothoe fontanesiana 'Rainbow' • variegated fetterbush	4 feet by 6 feet	streaky variegation of pink, cream, and white	Zones 4–8, 8–3
Physocarpus opulifolius 'Center Glow' • ninebark	6 feet by 6 feet	new foliage gold, aging to burgundy with gold center	Zones 3–8, 7–1
Pittosporum tenuifolium 'Ella Keightley' • Ella Keightley pittosporum	8 feet by 8 feet	cream and green foliage	Zones 8–11, 12–9
Pittosporum tenuifolium 'Gold Star' • Gold Star pittosporum	4 feet by 4 feet	gold-centered leaves	Zones 8–11, 12–9
Pittosporum tenuifolium 'Irene Paterson' • Irene Paterson pittosporum	5 feet by 5 feet	foliage heavily sprayed with pure white	Zones 8–11, 12–9
Rhamnus alaternus 'Argenteovariegata' • variegated Italian buckthorn	15 feet by 10 feet	limb up as small tree, low water use	Zones 7–9, 9–7
Sambucus nigra 'Frances' • European elderberry	up to 10 feet by 10 feet	irregular cream and yellow almost overwhelm the green	Zones 4–8, 8–6
Sambucus nigra 'Madonna' • European elderberry	up to 10 feet by 10 feet	splashed with gold	Zones 4–8, 8–6
Sambucus nigra 'Marginata' • European elderberry	up to 10 feet by 10 feet	edged in yellow	Zones 4–8, 8–6
Sambucus nigra 'Pulverulenta' • European elderberry	up to 10 feet by 10 feet	wildly speckled white	Zones 4–8, 8–6
Weigela 'Brigela' (French Lace) • yellow-edged cardinal shrub	4 feet by 4 feet	yellow margins	Zones 4–9, 9–1
Weigela 'Kolsunn' (Magical Fantasy) • Magical Fantasy cardinal shrub	4 feet by 4 feet	pure white margins	Zones 4–9, 9–1
Weigela 'Variegata Nana' • dwarf variegated cardinal shrub	3 feet by 3 feet	creamy margins	Zones 4–9, 9–1
Weigela 'Verweig' (My Monet) • My Monet cardinal shrub	18 inches by 18 inches	foliage a wild array of pink, green, and cream	Zones 4–9, 9–1
Yucca filamentosa 'Bright Edge' • Bright Edge yucca	3 feet by 3 feet	green leaves with gold margins	Zones 4–11, 12–5
Yucca filamentosa 'Color Guard' • Color Guard yucca	4 feet by 4 feet	gold leaves with green edge	Zones 4–11, 12–5



Eleutherococcus sieboldianus 'Variegatus'

progeny, 'Center Glow,' the new growth emerges gold and ages to burgundy, keeping a gold center well into summer.

A stand of red twig dogwood adds a ruddy color to the winter landscape; a variegated selection brings interest throughout the growing season. Selections of both *Cornus alba* and *C. sericea* give ample choices. The leaves of *C. alba* 'Elegantissima' are broadly and irregularly edged in creamy white, showing off well against the red stems; the margins are yellow and pink in 'Gouchaultii' and, in the overall more compact 'Ivory Halo,' white. Similar in appearance, the species *Cornus sericea* includes several selections with showy foliage: 'Hedgerows Gold' and 'Silver and Gold,' the latter with yellow stems instead of red.

The twiggy dogwoods grow best in full sun but will also take some light shade, making them part of the large contingent of plants that straddle the somewhat vague line between bright light and dark shadow.

The Middle Ground

Some variegated plants are perhaps more sensitive to site conditions than their all-green counterparts. Most variegated cultivars of the European elderberry *(Sambucus nigra)* need protection from hot afternoon sun; otherwise their foliage will burn. The leaves of 'Madonna' are splashed with gold, 'Frances' is mottled cream and gold, and 'Pulverulenta' is gold. All grow smaller than the species; they can be cut back in late winter and still flower in midspring, with large, flat clusters of tiny white flowers. The neatly edged variegated *Daphne* x *transatlantica* 'Summer Ice' withstands full sun in the Zone 8 mild, maritime Northwest but needs shelter from afternoon heat and harsh winds in St. Louis's Zone 6, even though the shrub is hardy there.



Sambucus nigra 'Madonna'

Form and Season

The white flowers of the variegated five-leaf aralia *(Eleutherococcus sieboldianus* 'Variegatus') may be unworthy of mention, but the impact of the wide, creamy margins on its leaflets amplified by the loose, airy structure of the shrub lights up shade. The variegated pagoda dogwood *(Cornus alternifolia* 'Argentea') also offers wide white edges to the leaves. The overall effect of the shrub comes from both its variegation and its tiered form—it's wider than it is tall. It should always be planted with enough horizontal room to show off its wedding-cake form.

Gardens in mild climate regions can take advantage of several variegated broadleaf evergreen shrubs for sun to part shade. The variegated Italian buckthorn *(Rhamnus alaternus* 'Argenteovariegata') can be limbed to form a small tree to about 15 feet. Cultivars of the New Zealand native *Pittosporum tenuifolium* show colorful foliage against black stems: Snowy white 'Irene Paterson,' yellow-centered 'Gold Star,' and cream and green 'Eila Keightley' are just a few available.

Variegation may be a sliver of white along a leaf's edge or a conspicuous patch of gold that nearly blots out the green. But no matter the color or extent of variegation, these showier versions of often-used plants offer additional variety in garden design. LAM

Marty Wingate is a writer and speaker about plants, gardens, and travel. Her web site is martywingate.com.



PLANTING AT THE ALASKA–YUKON–PACIFIC EXPOSITION

By James Frederick Dawson

As soon as John C. Olmsted's completed general plan of the Alaska–Yukon–Pacific Exposition had received the approval of the Exposition officials, he started at once to arrange for the planting and general embellishment of the grounds. The first step to be taken was to establish a nursery and build a greenhouse for the propagation and care of the plants and flowers that would later on be used in beautifying the various parts of the grounds. It was also necessary to provide a considerable area on which to raise sod, which would be needed, at the last moment, to cover areas that would be finished too late to be seeded. Therefore, at the very beginning of the work, 20 acres of land at the southern portion of the grounds were cleared of large trees, cultivated, drained, supplied with water-pipes, and put in condition to raise and take care of the necessary plants. About 10 acres of this were seeded for the purpose of making sod, but later on (about the middle of March 1907)—five acres of this seeded land had to be turned over for the use of plants. As soon as the ground was cleared, one greenhouse 100 feet long was built and equipped.


PLANTING AT THE ALASKA-YUKON-PACIFIC EXPOSITION

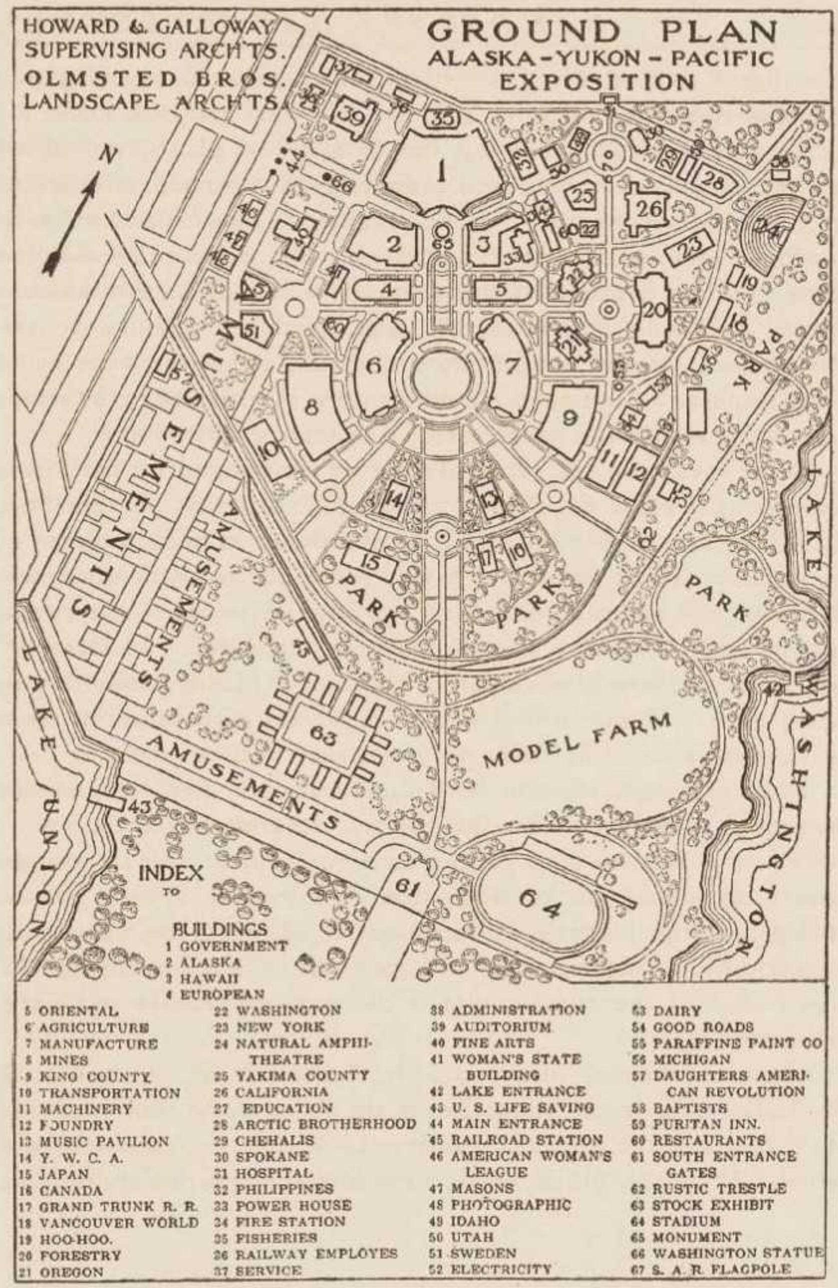
At this time an approximate list of the varieties and numbers of the trees, shrubs, and flowers was made and submitted to the Committee on Buildings and Grounds. This list called for 302,000 trees and

An official postcard from the 1909 Alaska–Yukon–Pacific Exposition, *top*, shows Rainier Vista, the key feature of John Charles Olmsted's design. A version of this article originally appeared in the first issue of *Landscape Architecture* magazine in 1910, *above*.

COURTESY ANNE KNIGHT AND JEROME ARBES POSTCARD COLLECTION, TOP; COURTESY ASLA LIBRARY, BOTTOM

As part of a yearlong celebration of its 100th volume, *Landscape Architecture* is republishing excerpts from its first issue.


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shrubs, 168,000 hardy perennials, 370,600 annual flowering plants—making the total 840,600. In this estimate, allowance was made for the loss of plants during the period of propagation, or otherwise, also for a surplus of plants to be retained in the nursery in case of accident, and for replacing, at a minute's notice, plants that would go out of flower. This list of plants did not meet with the entire approval of the Committee on account of its high estimate of cost, and a revised list was prepared by Mr. John W. Thompson, who offered to assist Mr. Olmsted in looking after the propagation of plants and other planting matters. The first estimate made for the landscape work, including the first list of plants, was about $96,000. This was revised and reduced, and a second estimate of $52,500 was made on April 12, and accepted. This called for a total of 266,000 plants, as compared with the first estimate of 850,000 plants. On the approval of this revised list, a considerable amount of seed of hardy perennials was purchased and planted in the greenhouse. Various contributions of shrubs and plants were made to the Exposition Company, about this time, but they were so various in kind and so small in number that they were of little value.

In the meantime, the work of clearing the ground for the drives and principal vistas was going on with great rapidity. At this time, Mr. Thompson appointed Mr. J. H. Randolph as head foreman of the nursery, and at once 20 men were put to work under his charge in sowing seed, preparing the ground in the nursery, and looking up native trees and shrubs to be collected. In October 1907, three carloads of shrubs and herbaceous plants, amounting to 58,000 plants, costing in the vicinity of $6,000, were ordered from the East and planted in the nursery. As soon as these plants arrived, the work of propagation of both the shrubs and hardy perennials was started with vigor. On the first of December 1907, a report showed that 194,000 plants were then on hand at the Exposition nursery, indicating an increase from October of 136,000 plants. During the winter months the propagation of plants was carried on energetically, and in the spring of 1908 the work of moving in the large trees and the construction of the principal courts and vistas was started.

In planning for the planting of the Exposition, it was Mr. Olmsted's idea to have the decorations ample, but, at the same time, simple and harmonious with the magnificent natural surroundings. It was, therefore, decided to omit any gaudy displays of ornamental carpet-bedding, such as designs of emblems, mottoes, or names of buildings worked up in colored foliage plants. A great deal of planting was done at the base of the buildings, in order to soften the hard architectural lines of the buildings as they merged into the ground. This planting, in most instances, took an informal line as it left the buildings, and then, by additional planting of an entirely different size and sort, merged into formal lines, to harmonize with the straight lines of the walks or streets, which were necessitated by the design of the grounds. On

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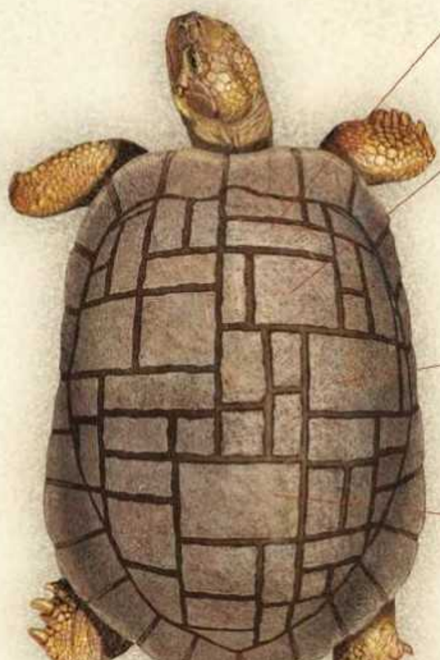
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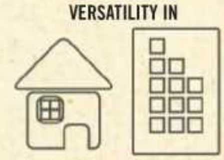
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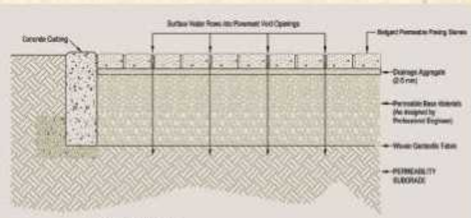
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account of the diversified topography of the grounds, a great number of steep slopes were made in grading the various streets. Instead of covering these steep slopes (many of which were several hundred feet long and from five to 20 feet high) with grass or vines, it was decided to cover them with flowering plants. This required considerably more work than was originally planned, as well as considerably more money than was originally appropriated. The Committee on Buildings and Grounds, however, readily increased the appropriation for this purpose to the extent of $33,000, making a total of $88,000, and the planting was then carried on on a larger scale than was contemplated for the first plan of the Exposition, and approximately two million plants were actually used, although the plan itself was considerably reduced.

Flanking the main approach, the two large banks on each side of the entrance plaza, extending into the Exposition grounds for several hundred feet, were covered with salmon-colored geraniums. These geraniums, Pierre Crozy and Madame Bruant, were in full bloom when the Exposition opened, and because of their quantity—about 12,000—made a magnificent display. The central part of this plaza was a large rectangular area of lawn, which was kept free of any flower beds. Crossing the upper end of this plaza, Alaska Avenue extended for several blocks through a depression of several feet in the ground. The slopes flanking this avenue on each side were thickly planted with the Alaska Daisy, numbering in all about 30,000 plants.

At the base of all the buildings encircling the main court were planted about 10,000 native rhododendrons. These plants were not used entirely for their blossoms, but principally for the effect gained by their dark, rich green foliage against the white buildings. As it happened, the season was later than usual, and the rhododendrons came into full bloom a week after the opening. Among the rhododendrons were planted many thousand foxgloves, which came into flower as soon as the blossoms of the rhododendrons had disappeared. The blossoms of the foxgloves continued their

magnificent display for about six weeks after the Exposition opened, when the blooms of the cactus dahlia, which had also been planted through the rhododendrons, began to appear and continued to bloom with great profusion until the Exposition closed. Between the planting of rhododendrons and the small hedge which separated the adjoining walks from the planting areas were planted great quantities of tufted pansies, which continued to bloom during the Exposition.

On the steep slopes bordering the cascade, many thousand climbing roses (of the Dorothy Perkins variety) were planted. As these roses would not bloom for several weeks after the Exposition opened, the entire area was planted with the Shirley poppy, which came into bloom a few days after the opening. The delicacy of the petals and the number of these poppies waving in the air gave the effect of a great sea of color. On the upper portion of these slopes, and at the base of the balustrade which separated these slopes from the avenues above, a great quantity of pink and white Canterbury bells added to the effect of this floral display. Below (i.e., south of) the cascade, the great geyser basin was encircled by a gentle slope, about 15 feet in width. This slope was entirely covered with yellow, blue, and white English tufted pansies, and presented, from the opening to the closing day, probably one of the grandest displays of flowers that has ever been witnessed. In this planting alone, probably 200,000 plants were used. Back of these pansies, at the base of the balustrade that separated the planting from the encircling drive, was a large display of peonies, which were succeeded by Canterbury bells, and they, in turn, by great masses of gladioli.

Below the geyser basin were the Formal Gardens, of geometrical design, the different divisions of which were bounded by hedges of Japanese barberry, closely clipped. The east and west divisions of these gardens were devoted to perpetual-blooming roses. These divisions were known as the Rose Gardens. The central portion of the gardens, known as the flower garden proper, was tessellated in design and was devoted to hardy perennials and annual flowering plants. In the rose gardens, 5,000 rose plants were used. These comprised not more than 10 varieties, but these 10 varieties were especially

selected to suit the climatic conditions, and were planted in large masses; the results being much more satisfactory than if a larger variety of roses was used, some of which would prove unsuited to the local circumstances. One of the features of the Rose Gardens was the ground cover, first of English daisies, of which 80,000 were used; and then, when they had ceased to bloom, the dwarf phlox *(Phlox drummondii)*. This gave the advantage of having the area among the roses carpeted with flowers long before the roses came into bloom and after they had disappeared. The flower garden proper, which contained 50,000 plants, was designed with reference to a color scheme, and

> These [Rainier Vista] hedges consisted of trees from 15 to 20 feet high and were transplanted from various parts of the Exposition grounds where they were growing naturally.

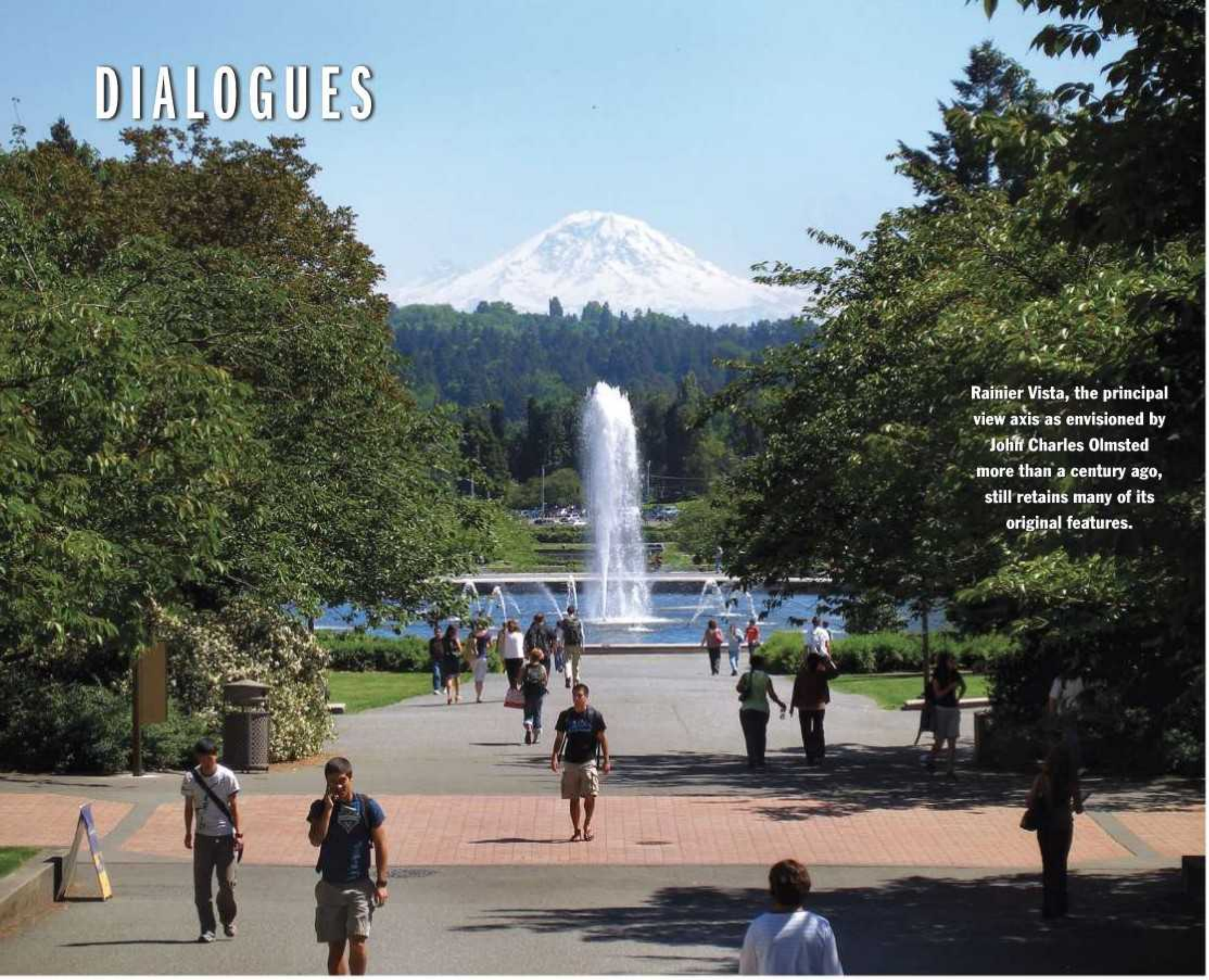
was so planned that when one lot of plants finished blooming another lot took its place. In arranging the colors for the flower garden, the beds surrounding the center were white, and then gradually radiated from the center into light pink, creamy yellow, and light blue, and darker pink and red, and rich blue on the outer edges of the garden. One of the attractive features of the flower garden was the large bed of sweet williams, which stretched entirely across the lower end of the garden. In this display there were about 2,000 plants. This formed the dividing line between the Formal Gardens and the parterre of Rainier Vista below.

Radiating from the center of the geyser basin extended the three vistas—over Lake Washington to the southeast, over Lake Union to the southwest, and toward Mount Rainier to the south. These vistas were created by cutting down broad stretches of immense timber, thereby forming magnifi-

cent pictures framed on each side by fir trees. On both sides of Rainier Vista, and on the sides of Union Vista and Lake Washington Vista connecting with Rainier Vista, hedges of Douglas fir were planted, partly to conceal the steep slopes back of them and partly to frame in the vista with a solid wall of green. These hedges consisted of trees from 15 to 20 feet high and were transplanted from various parts of the Exposition grounds where they were growing naturally. Between these hedges were broad panels of grass about 150 feet wide, on each side of which was an ornamental arrangement of walks, vases, benches, and formal beds of flowers. Here, again, was a succession of bloom. On the opening day, the columbines were in full flower, with long hedges of white spirea back of them, and they were succeeded to the closing day by great masses of hardy phlox, with a background of a continuous hedge of brilliant sunflowers. On each side of the Lake Union and Lake Washington vistas were 13 exhibits of the cactus dahlia, the official flower of the Exposition, shown from all over the world. In contrast to the development above described, the southeast portion of the grounds was kept as natural as possible. This area consisted of about 100 acres through which five miles of trails were built. All the dead trees, which were not attractive looking, and all the debris throughout the entire woods were cleaned out, and trails from six feet to eight feet wide were built to enable people to stroll amidst the rich vegetation and along the shores of the lake, where they could rest without being disturbed by the pomp of the interior of the Exposition. Several hundred seats of a rustic nature were placed along these trails, and many thousand plants, such as foxglove, iris, and purple loosestrife were planted through the woods and along the shores of the lake, making this informal work compare in attractiveness with the more ambitious formal design in what has proved to be—practically and aesthetically—a most successful Exhibition. LAM

James Frederick Dawson worked for the Olmsted Brothers firm and was the principal landscape architect for the Alaska–Yukon–Pacific Exposition.

Editor's Note: This essay has been edited for length.



Rainier Vista, the principal view axis as envisioned by John Charles Olmsted more than a century ago, still retains many of its original features.

FROM PAST TO FUTURE

The Alaska–Yukon–Pacific Exposition's legacy is evident on the University of Washington campus.

By Brooks R. Kolb, ASLA, Anne Knight, and Jerome Arbes

BY MASTERFULLY grading the earth to frame views and establish circulation routes, while also providing both a native and a formal landscape setting for the architecture of the 1909 Alaska–Yukon–Pacific Exposition (AYP) in Seattle, John Charles Olmsted created a framework of urban and landscape design so powerful that it still defines the University of Washington campus today. In the first issue of *Landscape Architecture* a century ago, James Frederick Dawson summarized John Charles Olmsted's ambitious vision for the AYP, making reference to the plan's three vistas (see "Planting at the Alaska–Yukon–Pacific Exposition," page 70). Today the geometry of those vistas remains, although two have been partially or completely blocked by buildings over the years. Rainier Vista, which extends downhill from the geyser basin, a large circular pool around which the original exposition buildings were arranged, is still the most celebrated landscape feature on the campus.

Unlike earlier fairs where the landscape was often secondary to the architecture of the fair, the AYP landscape design shaped the layout of the fair. Olmsted, in a 1906 letter to his wife, Sofie, wrote: "As they did me the honor to employ me before they employed their architect…I concluded it was my duty to stay and try to satisfy them."

Even though the current layout of the campus is the result of a series of plans spanning 100 years, each was overlaid on the Olmsted-designed framework of the AYP, and it continues to be the defining plan.

Capturing the views of the surrounding mountains and lakes, retaining elements of

ANNE KNIGHT









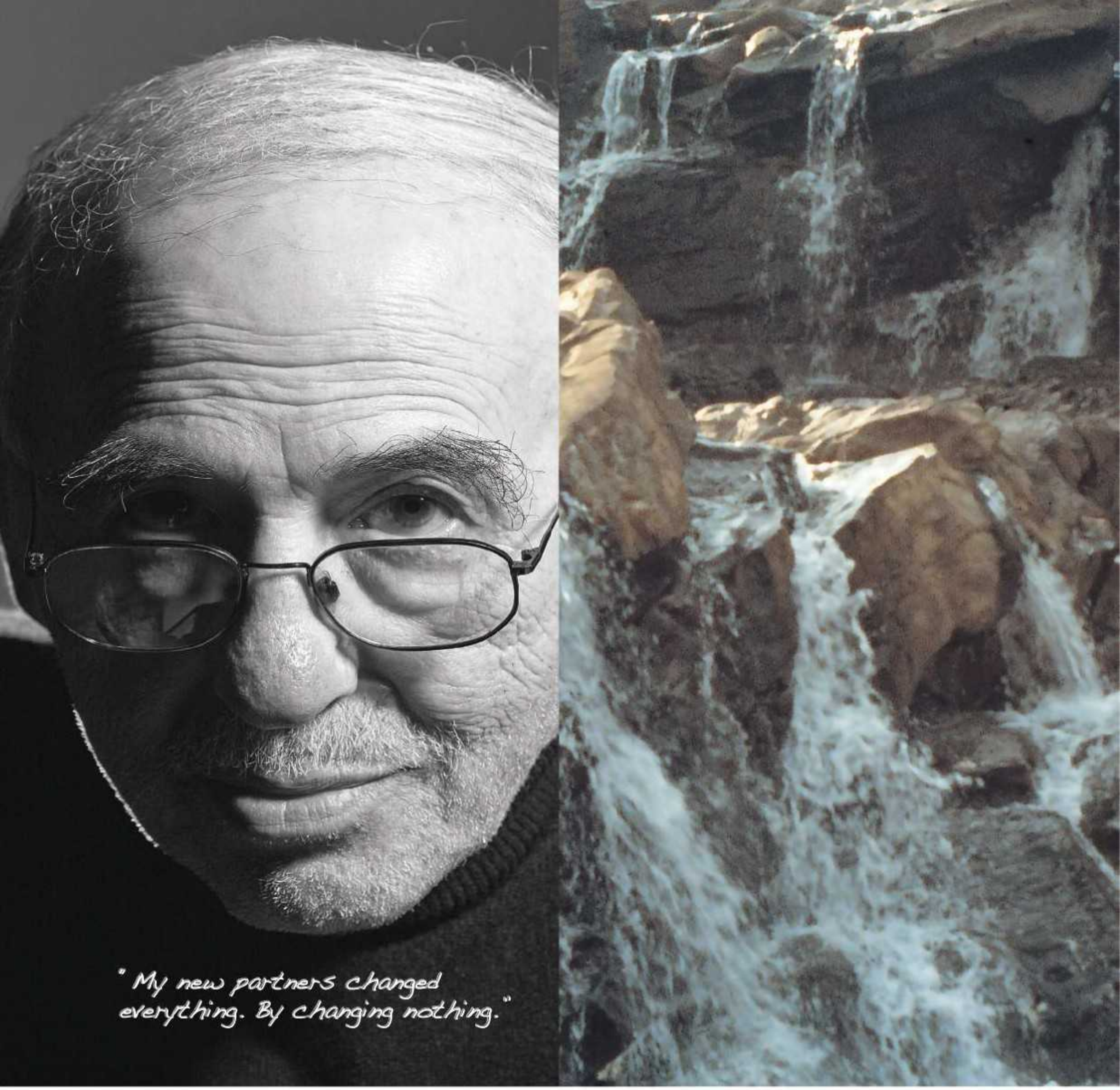


the native landscape, and providing the framework for circulation are the three critical aspects of Olmsted's design that we continue to enjoy today. There are not only the prominent legacies such as Rainier Vista, but also subtleties found in the landscape and framework of the campus in the form of groves or allées of trees and circulation paths. These communicate the history of development and help to make the current organization of the campus more understandable. The broadly curving pedestrian

The strong lines of Rainier Vista and the circulation routes that continue to define the layout of the campus grounds are evident in aerial images taken 100 years apart, *above,* from a tethered balloon in 1909, and *below,* from a helicopter in 2009.



COURTESY THE MUSEUM OF HISTORY & INDUSTRY. TOP; JOHN STAMETS, BOTTOM


"My new partners changed everything. By changing nothing."

route of the AYP, which intersected the three sloping view corridors, is today Stevens Way, the primary roadway through the campus. This design illustrates how important circulation systems are in connecting open spaces and for imparting a clear and orderly sense of place. Preserving the connectors between iconic open spaces can be as important as preserving the spaces themselves.

The primary surviving architectural legacy of the AYP is the Beaux-Arts classical Architecture Hall. The other few survivors are minor buildings or have been significantly altered. Thus, the landscape heritage and campus framework remain the most important legacy of the AYP. This should be respected and even celebrated in all future planning for the university.

In addition to the AYP, John Charles Olmsted planned and designed Seattle's park and boulevard system in the early 1900s. The university is integral to Seattle's overall open space system, which includes important connecting boulevards such as Lake Washington Boulevard linking the university to Washington Park and the university's arboretum. Understanding this outward urban context is equally important as the university faces the pressures of change.

Two major transportation initiatives are about to transform the lower campus at the foot of Rainier Vista. The large numbers of pedestrians arriving at a new light-rail station by 2016 could provide an opportunity to restore Rainier Vista as a major pedestrian entrance to campus, as it was intended during the AYP. Simultaneously, several designs for the replacement of a regional highway (State Route 520) could considerably weaken the connection of Lake Washington Boulevard from the arboretum to the campus while adding more traffic to this important part of Seattle's Olmsted-designed boulevard system.



The landscape heritage and campus framework remain the most important legacy of the AYP.



Architecture Hall, at left in both photos *above,* which was originally the Fine Arts Palace for the Alaska–Yukon–Pacific Exposition, faced a carefully planned allée, *top.* Today, a newly planted landscape makes the building visible, *above,* but only one poplar remains from the original allée.

UNIVERSITY OF WASHINGTON LIBRARIES, SPECIAL COLLECTIONS, UW5131, TOP; JEROME ARBES, BOTTOM

When designing the grounds, Olmsted was aware that his work might be forgotten when he wrote in *Alaska-Yukon Magazine* in 1906, "The magnificent views…will…be by far the greatest features…and will be vividly remembered…when the best efforts of the architects and landscape gardeners have been forgotten."

Yet, understanding his work and how the university's landscape heritage contributes to Seattle's urban fabric is critical. In 2009, the city of Seattle and many local partners hosted a yearlong, citywide centennial celebration of the AYP. Our organization, Friends of Seattle's Olmsted Parks, chose to participate in the festivities by highlighting Olmsted's work at the University of Washington campus and its connections to the city beyond. After a summer of walking tours and presentations, last December the Friends and the university's College of Built Environments hosted a presentation and panel discussion on the university's Olmsted legacy and its future. These efforts were meant to encourage a recognition of the significant landscape heritage embedded in the campus, as the university and city plan and evaluate current and future projects.

In planning the forum, the Friends challenged the speakers and panelists to address how the University of Washington campus



The official 1909 "Authorized Birds-Eye View of the Alaska–Yukon–Pacific Exposition" shows the event's relationship with the surrounding landscape.

can continue to evolve in a manner that recognizes the artistry and vision of the Olmsted design. Brooks Kolb, ASLA, president of Friends of Seattle's Olmsted Parks, provided an introduction and background followed by two presentations about other campuses with historic landscape heritage plans (see "Historic Campus Lessons" sidebars, pages 86 and 90). The two presenters were then joined in a panel discussion by three others familiar with the campus's history. The panel was moderated by Thaisa Way, ASLA.

> It is important to take a critical perspective… on some of those plans and ask yourself, was this a valid idea?
> —Jeffrey Karl Ochsner

When and How to Think About History—Panel Discussion Excerpts

THAISA WAY: When we think of the University of Washington campus, its layers of history, the various moments in time, the rituals, the sights, all this sedimentation of memory, how do we begin to identify what is important in our work as a community?

KRISTINE KENNEY, ASLA: To understand the significance of the cultural and physical history of the university, it is useful to first look at the historic evolution of the campus over time, overlaid with a timeline of local and national historic events that influenced that evolution. This will help to identify periods of significance, both tangible and nontangible, that can be used as a guide for future development.

JEFFREY KARL OCHSNER: Not all of the plans of various eras showed the respect

ROBERT SABBATINI, FASLA, is a planner, landscape architect, and urban designer. His work focuses on institutions of higher education. Prior to setting up an independent office, he led campus planning projects at Sasaki Associates in San Francisco.

SUSAN OLMSTED, ASLA, who is a distant relation of the Olmsted brothers, is an architect and landscape architect with Seattle-based Mithun, a multidisciplinary firm. She is also a guest lecturer and juror at the University of Washington and a board member of the Friends of Seattle's Olmsted Parks.

JEFFREY KARL OCHSNER is professor of architecture and associate dean of the College of Built Environments at the University of Washington. He has written extensively on the history of Seattle architecture.

KRISTINE KENNEY, ASLA, is the university landscape architect for the University of Washington.

JOHN STAMETS is a photographer and a lecturer in the Department of Architecture at the University of Washington.

THAISA WAY, ASLA, is assistant professor in the Department of Landscape Architecture and a landscape preservation specialist.



SABBATINI



OLMSTED



OCHSNER



KENNEY



STAMETS



WAY

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for the historic campus and its origins. So, while it is important to look at all of the plans over time, I think it is also important to take a critical perspective and look at each of the specific elements on some of those plans and ask yourself, was this a valid idea?

ROBERT SABBATINI, FASLA: At UC Berkeley, we found that landscape architect Thomas Church in the early 1960s was spot on in terms of what he had done in certain areas of the campus, and in other

HISTORIC CAMPUS LESSONS (PRESENTATION EXCERPTS): UC Berkeley and Mills College, Oakland, California

By Robert Sabbatini, FASLA

WHAT I'VE LEARNED from my work with campuses is that they have been imprinted with the visions of prior generations and that many of these visions have taken decades if not tens of decades to become realized. These visions and their enhancement by succeeding generations are a powerful means for each institution to manifest its unique identity and culture through placemaking. The goal is to tap the power of place and to nurture the public memory to encompass a shared time and shared territory.

In designing a campus, the goal is that if people come to the campus blindfolded, when the blindfold is removed, they know exactly where they are. If you put people on Rainier Vista (and it's a day you can see Mt. Rainier!) they'll know where they are. The campus should celebrate that.

We didn't fully understand the University of California, Berkeley campus until we had undertaken the Getty Foundation Campus Heritage Grant project to develop a landscape heritage plan. We recognized that there were four periods of historic significance of the campus. The first was the picturesque period when Frederick Law Olmsted Sr. did a plan for the College of California. He set up the view corridor to the Golden Gate. He also recognized the value of the creeks that ran through and flanked the borders of the campus and kept those intact and then identified building areas defined by the view corridor and the creeks.

Subsequent to that John Galen Howard came in the early 1900s during the Beaux-Arts period. He layered his plan on top of the major themes that Olmsted had produced, and, although it's Beaux-Arts in feel and character, it still respects the creeks and the views.

When we worked on Mills College we had a much stronger understanding of the methodology and importance of a landscape heritage plan. Mills College, steeped in campus rituals that took place in the landscape, saw this as a way of gathering and creating social identity and shared community.

What we need to understand is how the landscape works and what needs to be included in future planning and design. Not only do you need to look at the historic design intent, you have to understand all of the pressures that are being applied: where building sites might be, how the area is serviced, how people circulate, whether creeks are going to be restored, where the major views are.

Kapiolani Way serves as an example of our design methodology at Mills College. Planted by the founder, the blue gum eucalyptus trees were in excess of 120 feet tall. The Board of Trustees, when they attended meetings, parked their cars under the eucalyptus. There were ongoing discussions about whether to tear them down or not. Well, one dark and stormy night a branch went down on a convertible automobile of one of the trustees—it was an antique. The vote was taken; the eucalyptus came down. We understood that the eucalyptus trees are iconic to Mills College. The college celebrates these trees as part of its heritage. They are photographed, made into jewelry, and reflected in song and dance. We had discussions with some of the faculty because they wanted to use only native plants on the campus. They lacked an understanding of their cultural landscape heritage to the point where I told them that they were cutting their nose off to spite their cultural face. Fortunately, the college decided to replant the trees using a different species, *Eucalyptus saligna.* Just like their founders, the college started the trees from seeds and celebrated their planting in October 2009. Spaced on a 12-by-12-foot grid, this allée will be 20 feet in height in just three years, ultimately reaching 80 feet and being enjoyed for another hundred years.

I learned something new from the Mills project. In my role as a landscape architect, I need not only to be a designer, but also to be an advocate.







A historic eucalyptus allée at Mills College, *top*, was removed, *above*, and replanted, *right*, with a different, fast-growing species of eucalyptus.

VONN MARIE MAY. TOP: ROBERT SABBATINI, FASLA. BOTTOM TWO


Red style Straight Edge


Peachtree Avenue and Parquet Tan style Antique

areas he had totally obscured the whole historic reasoning requiring our intervention to bring back the original design intent.

OCHSNER: Campus history and heritage are typically paid attention to when preparing an environmental impact statement for a specific building project proposal. Unfortunately, environmental impact statements tend to focus on the structures and ignore the open spaces, yet it is the open spaces that are most vulnerable.

JOHN STAMETS: The Olmsted Plan and the AYP created a huge canvas for UW to build upon, but the overlay of what was actually built in the subsequent years has left us with a very confusing campus to navigate. Today the campus is a pedestrian shipwreck.

SABBATINI: The complexity of the existing campus reflects the erosion of the big concepts and apparent simplicity of the past plans. However, with further understanding of the planning and design intent of the past planners and designers, one could express the unique characteristics and identity intended for UW.

Dynamic Landscapes and Historic Preservation

WAY: How does historic preservation use the past to look to the future?

SUSAN OLMSTED, ASLA: Sustainability and ecological performance are critical components of our work. As we are looking at the past, we need to engage modern science in understanding how historic landscapes can function environmentally so that we have a history to give to the next generation. The challenge is to honor the historic character, facilitating contemporary use and improving ecological function.

KENNEY: The removal of the poplars in front of Architecture Hall is a great example of the evolution of a landscape that occurs on campus. Prior to their removal, there was a public outcry to preserve the trees based on their historic significance. However, upon their removal, Architecture Hall was visible for the first time in decades. Although there was a historic element lost, I think we gained something significant in the end.

> The Olmsted Plan created a huge canvas to build upon, but the overlay of...subsequent years has left us with a very confusing campus. Today the campus is a pedestrian shipwreck.
> —JOHN STAMETS

WAY: There was a time when Philip Johnson wanted all the trees off the lawn at the University of Virginia campus, so you could see the architecture better, which from

an architect's point of view has some merit.

STAMETS: Not just from the architect's point of view, I think from everyman's point of view. How do you deal with Architecture Hall versus the poplar trees? Which was more historical? Looking at the 1909 picture I only saw some little trees, and everybody could enjoy the beauty of the building. The newest trees are fast growing and will cover up Architecture Hall again before the end of my life, and I think that is a travesty. That building is absolutely beautiful, and I think the glorification of trees (at this site) is wrong.

WAY: So we'll just replace them every five years.

Historic Character: Gestures vs. Intentions

WAY: How do we identify the historical character of this campus and what might be some of the elements, details, rituals, pieces that we might want to think about?

SABBATINI: The overall organization of the campus is confusing. One of the first things to look at to strengthen orientation on this campus is the basic structure of the open space and buildings. Signage is not enough.

KENNEY: When you look to the past for clues about how to transform a landscape for current needs, the most important aspect to comprehend is the gesture or the design principles that underlie the design on the land, as opposed to execution of the design itself or the historic artifacts that still exist but may have been compromised in their integrity. The gesture of connecting the university to the regional icon of Mount Rainier was identified as the most significant feature to retain and enhance when we developed the conceptual plan for the vista landscape.

OCHSNER: I would like to take a somewhat different point of view. In the historic preservation field there is a process, which is generally accepted, which can be described very simply in three steps: (1) describe the historical resource; (2) evaluate to determine what is significant; and (3) build policy on the description and evaluation before intervening. John Stamets's photographic documentation project is fascinating because it overlays the AYP plan and the campus as it is today and allows us literally to go through, identify, and describe what is authentically historical. And, sorry to disagree, I don't think it's just gestures—it's physical attributes that are there on the ground. There's a methodology for this kind of analysis. Using that standard method will provide a basis for preserving what's important, and

> The most important aspect to comprehend is the gesture or the design principles that underlie the design on the land, as opposed to execution of the design itself.
> —KRISTINE KENNEY, ASLA

we won't let buildings get built that obliterate key open spaces.

STAMETS: One mechanism is HALS (Historic American Landscape Survey). There has been the Historic American Buildings Survey for buildings, Historic American Engineering Record for industrial structures, and now the Historic American Landscape Survey has been added.

Design Integrity

WAY: While I agree that there is a process, those of us who have worked with HALS know there is also a dilemma: Plant growth and change create a dilemma of integrity.

> I don't think it's just gestures—it's physical attributes that are there on the ground. There's a methodology for this kind of analysis.
> —JEFFREY KARL OCHSNER

HISTORIC CAMPUS LESSONS (PRESENTATION EXCERPTS):

Washington State West Capitol Campus, Olympia, Washington

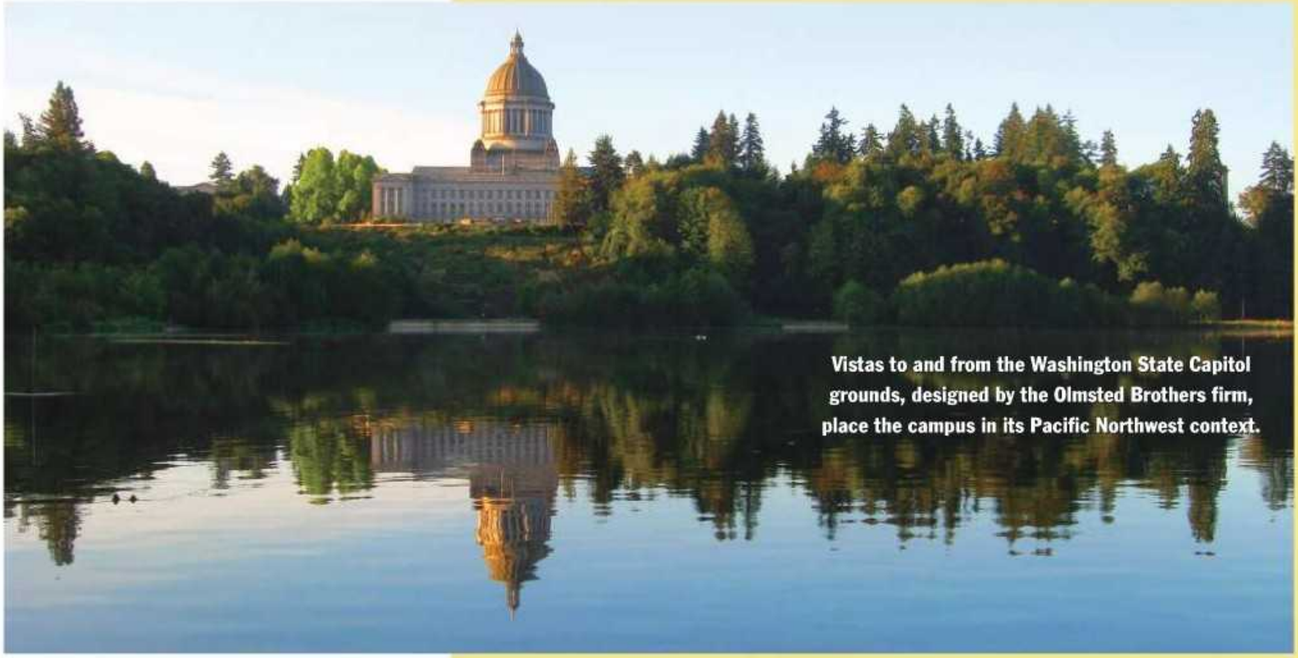
By Susan Olmsted, ASLA

THE WEST CAMPUS of the Washington state capitol is situated atop a bluff overlooking Capitol Lake, Puget Sound, the city of Olympia, and, off in the distance, the Olympic Mountains. It is a critical link within an interconnected network of open spaces and green corridors.

In envisioning the future, we here at Mithun layered the continuum of influences that have shaped the campus over time. We determined the health and integrity of the resources based upon comparisons between the historic plans and present-day conditions. Layered also with sustainability goals, this analysis informed our recommended preservation treatment, the shape of the master plan, and actions and management for the future. Though the campus has changed, the "bones" designed by the Olmsted Brothers and architects Wilder and White are remarkably intact. We can continue to build upon the framework for the campus that is already in place and activate the Olmsted Brothers' vision within a 21st-century landscape.

As a specific example of our analysis and planning that might also inspire ways to think about the UW campus, we identified the sequence and experience of moving through the series of "landscape rooms" that comprise the campus. At the capitol, this aspect is most clearly observed by looking at vegetation patterns and the layers of trees and shrubs throughout the campus. Many of the existing trees are in poor or fair condition, and in the absence of consistent stewardship, may be lost from the landscape. These changes to the campus are incremental. Incrementally, the historic vision can be all but lost in time. Or incrementally, the historic vision can be realized.

The Olmsteds understood the importance of the surrounding landscape—civic, residential, forest, water, and mountains—toward imparting a unique sense of place for the state capitol. One of the most evident ways that both the Olmsteds and Wilder and White responded to the campus setting was through a strong north–south axial relationship. The views to and from the capitol along this axis, framed by the native forest, are critical manifestations of this relationship. The quality and legibility of these views are currently threatened today by controversial development plans, both on campus and off campus. Common to historic campuses like the State Capitol is the challenge to reconcile the tension between our cultural heritage and modern-day needs through a struggle to identify what we value.



Vistas to and from the Washington State Capitol grounds, designed by the Olmsted Brothers firm, place the campus in its Pacific Northwest context.

SUSAN OLMSTED, ASLA


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SABBATINI: Where do you draw the line in terms of what you're doing? Are you duplicating exactly what was there in the past or are you respecting the general design intent of what was there in the past but reflecting the modernist design?

KENNEY: The final landscape design is just one evolution of an entire creative thought process. A balance needs to be found between what was actually constructed and the original design intent. Unless there is thorough documentation, we often can't get into the heads of the designers of historic landscapes to understand the underlying concepts behind their designs, so much of this is left up to interpretation. Keeping that in mind is important when you're looking at historic plans or landscapes and trying to extrapolate the significance.

OCHSNER: It's an interesting dilemma, this question of modern intervention in historical fabrics. Many people probably regarded I. M. Pei's pyramid at the Louvre as a travesty when it was first proposed. But it's a tremendous thing, isn't it? The Louvre is so much easier to deal with now, in its scale, and we appreciate the kind of liveliness that element brings to the center of the space. I think it was a brilliant solution, totally unpredictable and obviously a modern intervention. It is a difficult thing to predict, this serendipity in juxtaposition. On the other hand, I. M. Pei used the axial organization of the symmetrical building to decide where to place the pyramid. He didn't put it arbitrarily off center to create asymmetrical, dynamic juxtaposition. He respected the order of the building. This is a difficult balancing act. The questions are "What is the scale?" and "What is the order?" It is a design problem. There is no recipe.

> Colleges and universities in recent years, as they realized they were in competition with one another, have found that they have lost their unique sense of who they are.
> —ROBERT SABBATINI, FASLA

Forming an Orchestra of Designers

AUDIENCE MEMBER: As designers or planners, we naturally want to make our own mark. Are we getting a little bit better than in the 1960s when it was out with the old and in with the new and the hell with what happened a century ago, or is that still the tension we need to keep?

OLMSTED: The guidelines for the treatment of cultural landscapes discourage the mimicry of historical features for new interventions, but it is a continuum, a site-specific question.

OCHSNER: It's a fundamental tension. In some ways what you're asking is "Do

we know how to be ensemble players as opposed to soloists?" I would like to think we are ensemble players with those who have come before us as well as with those who come after, creating a generational continuity, but I don't know if that's taught or learned. Maybe you have to have gray hair. I think there always will be tension between how we make a statement of this time and how we work within the framework of what we inherit and pass on.

WAY: It is important to acknowledge that we're having these conversations about historic landscape heritage, but does this discussion make a difference or is this just icing that you can wipe to the side?

SABBATINI: The tension is still there, but colleges and universities in recent years, as they realized they were in competition with one another, have found that they have lost their unique sense of who they are. A community college in Southern California found potential students chose other colleges because of the campus's appearance from the road. The sense of beauty and social community on a campus is extremely important.

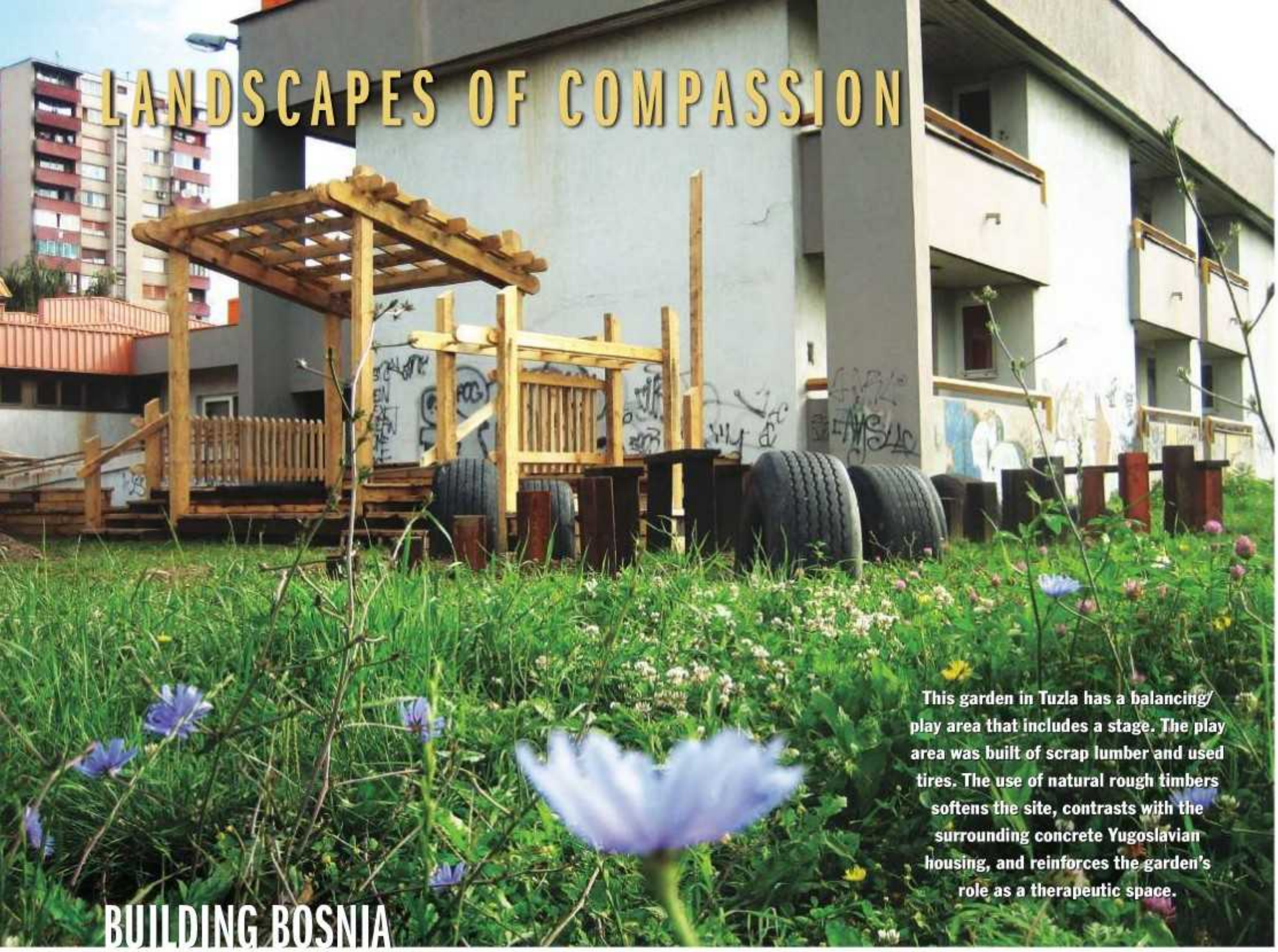
> The opportunity for interpretation raises important questions... that help us to determine who we are and what we want to say to the future—without destroying the past.
> —SUSAN OLMSTED, ASLA

KENNEY: There are a lot of features of the AYP that would be great to restore and contribute to the historic and cultural understanding of the university, but the maintenance and cost present enormous challenges. Especially at state universities, it is hard to fund landscape projects unless they are connected to a building project. So restoration of even the most cherished open spaces is extremely difficult, and the slow deterioration is a growing reality.

OLMSTED: I think that we are searching as a society for what this all means. The opportunity for interpretation raises important questions of heritage and expression that help us to determine who we are and what we want to say to the future without destroying the past. LAM

Brooks R. Kolb, ASLA, is the principal of Brooks Kolb LLC Landscape Architecture in Seattle, a firm specializing in residential garden design. He serves as president of the Friends of Seattle's Olmsted Parks and is past president of both the Northern California Chapter of ASLA and the Washington Chapter (WASLA). Anne Knight and Jerome Arbes have been active members of the Friends of Seattle's Olmsted Parks since 1987. In 2003 they served as project managers for the yearlong Olmsted Centennial Celebration in Seattle, and in 2009, they were project managers for FSOP's Alaska–Yukon–Pacific Exposition Centennial project. Arbes is a past trustee of the National Association for Olmsted Parks.

LANDSCAPES OF COMPASSION



This garden in Tuzla has a balancing/play area that includes a stage. The play area was built of scrap lumber and used tires. The use of natural rough timbers softens the site, contrasts with the surrounding concrete Yugoslavian housing, and reinforces the garden's role as a therapeutic space.

COURTESY DANIEL WINTERBOTTOM, ASLA, ALL

BUILDING BOSNIA

Therapeutic gardens cross the boundaries of a Balkanized society.

By Daniel Winterbottom, ASLA

FIFTEEN YEARS AGO Sarajevo, once the jewel of the Balkans, was under siege, on the edge of starvation, enduring continual bombing and attack by sniper fire. Most of the population of 400,000 was unable to leave, dodging bullets to get water and dependent on outside humanitarian aid. Many of the cities and towns throughout Bosnia and Herzegovina (BiH) fared no better. From 1992 to 1995, Bosnia, and to a lesser extent Croatia and Serbia, were devastated by brutal ethnic cleansing. Mixed families were split apart and neighbors attacked neighbors.

Twelve years later the United Nations peacekeepers had left and humanitarian aid had been reduced. Those struggling with the physical and emotional scars of war—amputations, disfiguring scars, and post-traumatic stress—were left to rebuild their lives and social institutions. The corruption that arises in a broken political and economic system breeds cynicism. In a country where access to nature is restricted by land mines and the cities' fabric is disrupted by the bombed-out hulks of former buildings, optimism is fleeting for a younger generation inheriting the tragedies of the past.

Along with the despair there are hopeful signs of repair. Each time I return to Sarajevo I am impressed with the rebuilding efforts and see noticeable improvements despite an unemployment rate hovering around 20 percent. Small-scale efforts are creating a thriving street life. Austro-Hungarian-era structures are being restored, and historic connections to rivers and mountains dating from Turkish settlements are being rebuilt.

The ecological challenges are more difficult. Toxins released from munitions factories are now ominously entering the streams and rivers. The reliance on wood for heating is diminishing hardwood forests, and neglect of sewage and storm drainage systems has affected water quality, a sad development in a country once renowned for its "sweet" and drinkable streams. As efforts to repair the war damage continue, opportunities to develop green infrastructure, create urban and national forests, and set policies to preserve the agricultural lands near urban centers are now emerging.

For those displaced from their homes, with no land to till, trying to rebuild their lives and culture, there is a need for community gardens. The Community Gardening Association of Bosnia Herzegovina

(CGABH) is one local nonprofit addressing local food production. Formed in 2000 by Davorin Brdanovic, a war survivor himself, the organization has created more than 20 community gardens in BiH that serve more than 3,000 participants. All but one of the gardens are multiethnic by design. This planned reconciliation effort has bridged animosities hardened during the war, and the results have been therapeutic for the participants. As Davorin notes, "At first I saw the need for food, and that was our sole focus. Over time I saw that people of different ethnicities were sharing labor and food and talking, and those who came into the garden severely damaged now had a purpose. They smiled as they entered the gardens and realized those across the table were no different than they were. Both had suffered and now they could help each other to heal."

I met Davorin in 2000 while serving as a board member of the American Community Garden Association. While I was giving talks about therapeutic gardens we had created in prisons and AIDS and cancer facilities, he shared his realizations about the healing effects of his gardens. It took two years to bring our collaboration to fruition. Beginning in 2006, I worked with CGABH to create a manual to guide the training of local association members in horticultural therapy and nature play. Twelve members from different associations were selected to receive training during the next year. In the summer of 2009, I brought three graduate and two undergraduate students from the United States and Canada to Bosnia to design and build two demonstration restorative gardens for severely disabled children with two of the associations—one in Tuzla and the other in Bugojno, both in central Bosnia.

Therapeutic Gardens

It is estimated that there are 120,000 people with special needs living in BiH, and they receive almost no support. Many parents keep their disabled children indoors, out of public view, and the children are often shunned by their peers and by adults. Facilities for these children and their fami-



From left are students Max Schneider (Harvard), Ruhiyyeh Nelli Newport (University of Washington), Caitlin Blundell (University of Toronto), Jonathan Jue (University of Washington), and James Frank (University of Manitoba), who designed and built the Tuzla project in three weeks and the Bugojno project in two weeks.

lies are in short supply, and the few that exist operate with little funding, resources, or skilled care providers. Hope for a productive, integrated future for children with disabilities is limited.

Gardens offer many benefits for children including play, education, nutrition, and vocational skill building. For children suffering from emotional and social disabilities, helping to care for and cultivate a garden offers a distraction from memories of pain and loss. In this natural environment, supported by adult supervision, children can feel safe to play, explore, and learn. Stress is reduced as they hone fine and gross motor skills, improve social interactions, and develop self-esteem. Evidence of using gardening programs to help in reintegrating children into their communities is found in many cultures. In Sierra Leone and Kosovo, vegetable gardens are being used in refugee camps and orphanages. The children enjoy preparing soil, planting seedlings, harvesting produce, and working together to forge new friendships with children whose parents fought one another during the conflicts.

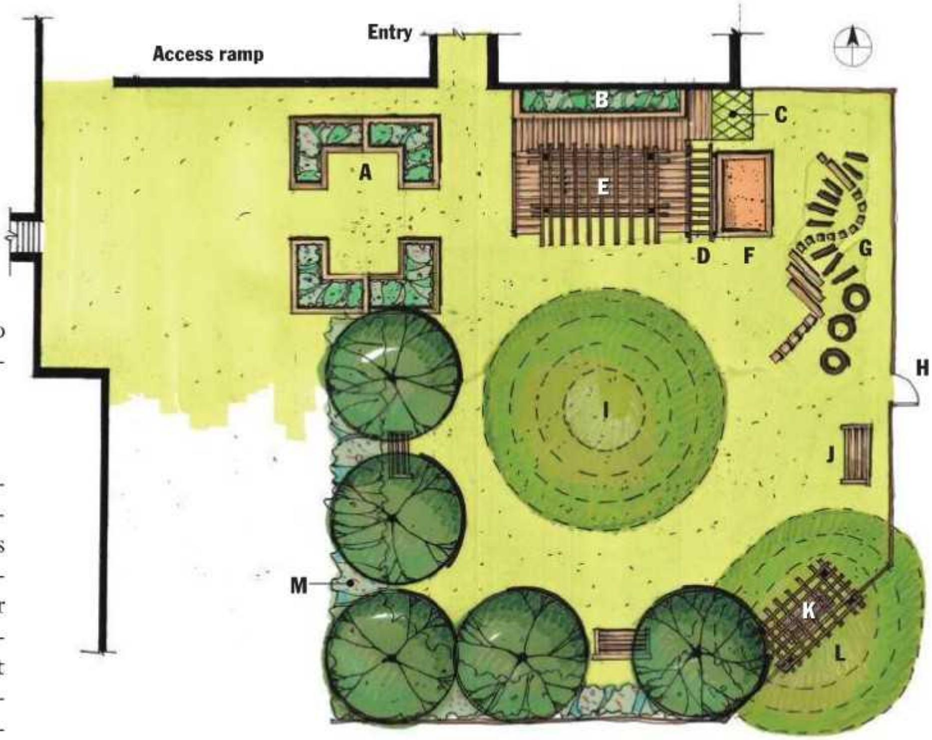
In 2007, we were asked by CGABH to design and build two gardens for another nonprofit organization that is located in Mostar, a city in the southern portion of BiH that was extensively damaged during the war and remains today a divided city. The first site was in that city and the second was in Bugojno, a small town in west central Bosnia, close to what was the battlefront between Croatian and Serbian armies, an area that was heavily mined and bombed. Before our arrival in Mostar the Croatian mayor declared that unless the Bosniak organization director stepped down the project could not proceed. If the director remained, only Croatians would be allowed into the facility. Because of the tense unresolved political situation, the project in Mostar could not move forward, and the Tuzla project, in north central Bosnia, was chosen as a replacement.

The two projects differed in several respects. First, the Tuzla site, called Odgovor, was run by the state, while the Leptir facility in Bugojno was created and managed by the community. State-run institutions in Bosnia tend to be bureaucratic and subject to influence by wealthy patrons. The association in Tuzla was staffed by government employees. Leptir was a grassroots organization that advocated for the rights of disabled children. They were reliant on volunteers and sweat equity and were very child centered. Interactions between association members and our team differed in each project. At Leptir it was common to sit as a group over coffee, comparing stories about life in North America and in pre- and postwar Bugojno. We learned about how children with disabilities were treated and the parents' personal struggles to seek care. Interactions at the

state institution were more limited and formal. We did reach out and work with many of the clients and teenagers in the surrounding neighborhood and had some meaningful exchanges with the outgoing youth and local residents who toured our team through Tuzla. The curiosity of the staff was much more reserved.

Tuzla Garden

The Association Odgovor's building is surrounded by 12-story concrete towers dating back to former Yugoslavia. It houses several social service agencies and a community center and is covered with graffiti. Our site was an undeveloped, open, 20,000-square-foot space. Arts play an important role in the program, and the association envisioned a therapeutic park for horticultural therapy, play, vocational training, and performance. Before our arrival, the CGABH conducted staff and parent focus groups. They asked us to develop a schematic master plan incorporating a stage, play area, raised garden beds, and contemplative elements. Our project in the summer would be the first component of this long-range vision for the entire site. American Friends Service Committee (AFSC) purchased a large quantity of pine, including rough-cut timbers, planks, and framing lumber, which



The plan for phase one of the Tuzla project, *above,* addressed the immediate needs of the community. Closest to the building, this space offers therapeutic activities for the participants and an open space that can support large gatherings and celebrations. Elements of the plan include (A) horticultural therapy beds; (B) planting backdrop; (C) rope climb; (D) monkey bars; (E) stage and arbor; (F) sandbox; (G) play/balance course; (H) gate and fence; (I) grass play mound/stage seating; (J) bench; (K) arbor and swing; (L) turf mound; and (M) sensory garden. Jonathan Jue, *below left,* connects the posts to framing. Most of the students had little construction experience prior to the project. Students frame the swing arbor, *below.* Separated from the other elements in the garden, the swing provides a calming motion and an opportunity for contemplation as well as a quiet place to relax and converse. Caitlin Blundell works with Ruhiyyeh Nelli Newport and local volunteers from Tuzla, *opposite bottom,* to fabricate the arbor.





STUDENT PERSPECTIVE

By Caitlin Blundell, University of Toronto

In four years spent studying the intricacies of international development for an undergraduate degree, the Balkan Region—site of the bloody conflict and ethnic cleansing that caught the attention of the world media in the early 1990s—was mentioned precisely zero times. In fact, when a poster advertising the University of Washington's design/build initiative in Bosnia appeared in the Daniels Architecture, Landscape, and Urban Design building at the University of Toronto, a quick survey of my first-year MLA classmates revealed the paucity of our knowledge about the region and the war that had recently left its mark. I applied to the program with some trepidation, not at all sure what to expect. It's all well and good to go to Africa to dig wells or South America to build schools, but small-town Bosnia? To build a garden? I wasn't sure whether this was "development" or not, or even whether it was landscape architecture, but it was the closest thing I had found to an international charitable mission for an aspiring landscape architect.

The acceptance letter I received from Washington recommended undertaking some research into the complex political mechanisms of Bosnia in order to hit the ground running. I wasn't sure what effect Josip Broz Tito's relationship with Joseph Stalin, or the prevalence of land mines in the countryside, or even the formation of the Sarajevo army in the early 1990s, could possibly have on the design or construction of therapy gardens for disabled children, but I soon became engaged in the story of Bosnia's political economy.

As it turned out, all that research really was crucial to understanding the current political situation: Bosnia is split in two halves, with the Orthodox Serbs remaining separated from the Catholic Croats and Muslim Bosniaks. There are three presidents, creating a unique and extremely delicate political situation. The country's infrastructure has recovered, but Bosnia is still reeling financially and psychologically from both the fall of communism and the war. The countryside is littered with mines, and the urban fabric has visible evidence of conflict with mortar damage to buildings and sidewalks. Our role was seemingly to help push a very simple agenda—better facilities and resources for the children who need them most—but it quickly became clear that in Bosnia, nothing is simple. Choices about where to work and for whom (one project was at a state-run school, the other a nonprofit association) were fraught with tension. We also realized what a gift the gardens were to the schools that had petitioned for them. The luxury of having a place designed specifically for therapy simply did not exist where we were working. While Bosnia has a laudable history of vernacular public space, the squares and streets are designed for sitting and drinking coffee, not for children, and especially not for children with mobility challenges.



This program had three key positive outcomes for me personally. I developed strong relationships with students from different schools in Canada and the United States, as well as connections with Bosnian and Croatian gardeners and landscape architects. I gained a better understanding of the many ways a war can affect landscape, and I found a new application for landscape architecture as a form of activism, by pushing a political agenda of support for children. Any regrets I have are associated with the requisite speed of the projects. We could have spent weeks more studying the needs of the recipient schools and the goals of the host organization. Unfortunately, two projects in a six-week time frame didn't allow for much time spent without a hammer or saw in hand. However, I do feel that the experience led me to see landscape architecture in a new light and armed me with knowledge about working in a little-traveled corner of the world.

LANDSCAPES OF COMPASSION

became our primary building material. After meeting with the staff and touring the site, the team reassessed the master plan, specifically the first phase areas, and developed three alternative schemes. Our team selected and refined one scheme for review by the director and staff.

The concept featured a central mound as a focal point separating two zones. The 40-foot-diameter turf mound supports crawling, climbing, rolling, and seating to view performances on the stage 12 feet to the north. The zone closest to the building was designated for the most active elements, and these structures we linked for a sequence of therapeutic play. At the building entry, stepped raised beds for horticultural therapy and vegetable production create a formal connection from the access ramp into the garden and allow easy entry for the most impaired users. The two-level "stage" uses the existing building as a backdrop. In addition to performance and event space it serves as an outdoor classroom and as a play structure. The stage integrates monkey bars and a ramp, creating a transition to the most active physical play with balancing elements built from donated tires and leftover timber.

The contemplative second zone on the opposite side of the mound will have extensive plantings and elements to support quiet activities. The environment is calming, with a shade arbor and six-foot bench swing where children can relax, read with care providers, and quietly socialize with one another. Given the summer heat, the proposed plantings were postponed to be installed by CGABH. Adjacent to the arbor will be a sensory garden with shade trees, the mound will be seeded with grass, and the planter boxes will be sown with seed and starts by the clients after they return in the fall.

To organize the construction and give students site-management experience, each student was asked to take the lead in building a specific element: the arbor, stage, play area, or raised planters, for example. The team met each morning to discuss the work schedule, use of volunteers, design changes, student needs, and prog-

ress updates. Most of our team had little construction experience, and in this first project in Tuzla, students were guided by the instructor to learn the fundamental tasks of layout, footing, timber and wood frame construction, and grading. The confidence gained here would pay off later on the second project.

Local youths in the association's program volunteered to help in the construction, and friendships developed that deepened our understanding of the community. Several of Odgovor's participants came in the morning excited to build. A young man of 18, Samir, while having limited use of his legs, easily drove 10-inch spikes into the timbers and continually joked with our team members. Another, Maliek, who was studying electrical engineering in a town just outside Tuzla, took the bus to our job site every day. Volunteerism is relatively new to Bosnia, and while the associations encourage it, many youth see the service as a social rather than a work opportunity. Maliek was the exception as he constantly roamed the site looking for tasks and became a close member of the team. He brought his father to the site to see the transformation and has continued to work with the association to complete the few elements we were not able to finish.



The ramp at the Bugojno project provides a dignified and graceful access into the garden and the building. The raised planters accommodate users with limited mobility, allowing them to garden on a stable surface. The curved path elicits a casual meander, and visitors will experience the sensory plantings as they enter the building, an experience that reinforces the nurturing mission of the association.

Our efforts in three weeks had several significant outcomes in Tuzla. First, with the building of a portion of the park, the association has a concrete idea of what can be accomplished in continuing phases. The garden is a catalyst to the development of the remaining space. The association is planning to add additional elements in the spring of 2010, and several staff members have asked to be involved in future projects. Therapeutic gardens are not familiar prototypes in Bosnia, and care providers who are intrigued with their potential are challenging themselves to integrate new activities into their teaching. Administrators can experience the operation of a working garden and design their curriculum around it. The local youths who joined us in the building process gained an understanding of the association and their clients. Several have continued as volunteers, and their involvement may result in less stereotyping and marginalization of disabled youth.

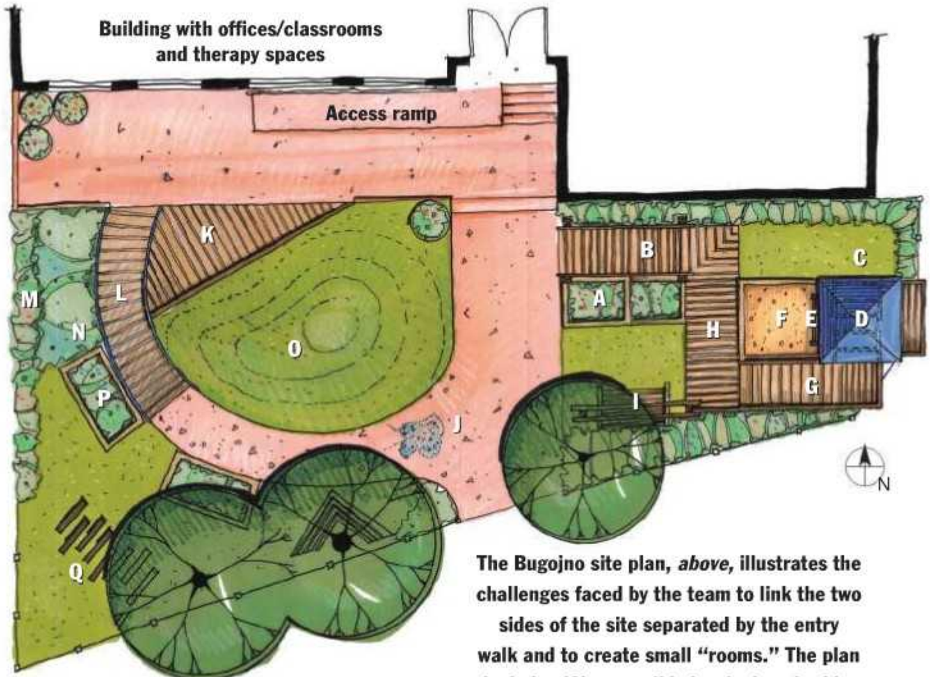
While pleased with what was accomplished, the team felt a sense of incompleteness when we left. At the time it was not clear that the organization would finish the project, and hearing that they will complete what was begun is reassuring. Most satisfying is that when the participants returned in the fall, the garden was a compelling reason to go outdoors. In addition to the therapeutic activities, the youths can observe and explore the natural meadow and streamside that surround the garden.

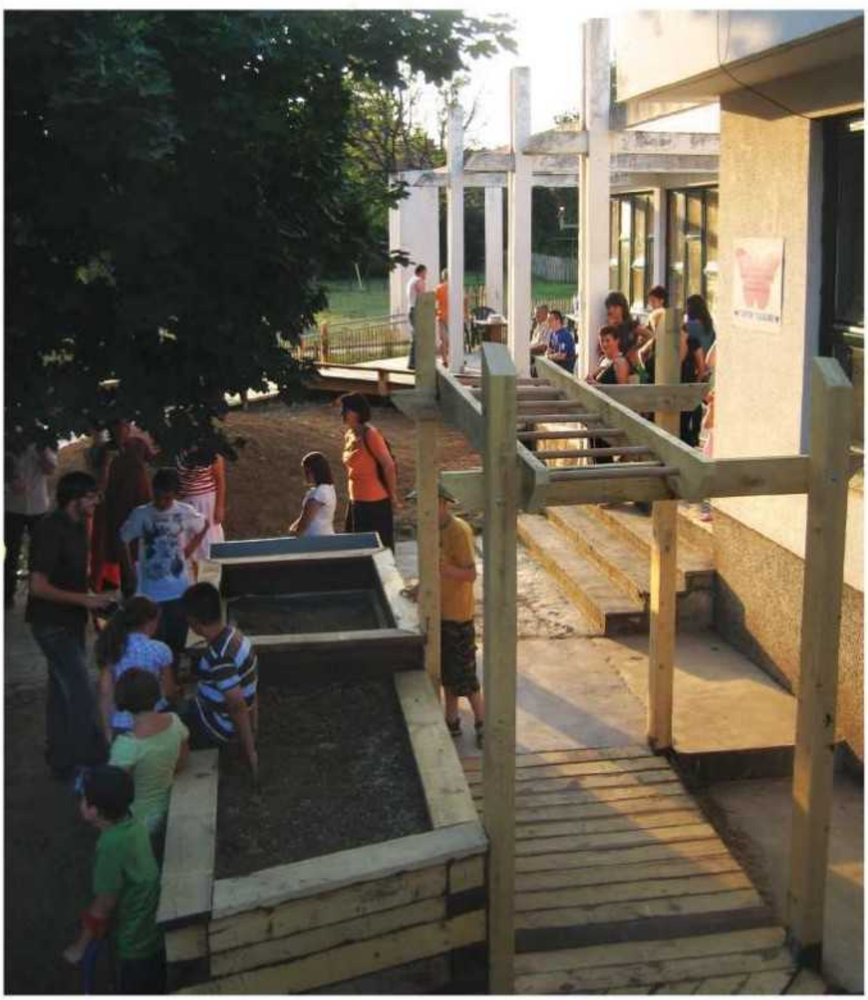
The Healing Garden at Leptir

After a week's break to the Dalmation coast, we arrived in Bugojno to work with Association Leptir. For 15 years, the parent-founded group has been raising disability awareness. Leptir serves 80 to

90 children a year with physical, occupational, and speech therapies and art classes. Their classrooms and offices, occupying a former school, had been refurbished by volunteers from France. Our site, the front yard, was visible from a well-traveled pedestrian street. The garden space would function as a therapeutic environment, and, because of its visibility, it would promote equality for children with disabilities by not hiding them but by folding them into the community.

The site's assets included three shade trees, an open field to the north, and the relative quiet of a residential neighborhood. The finished floor elevation of three feet above grade at the front yard





The Bugojno site plan, *above,* illustrates the challenges faced by the team to link the two sides of the site separated by the entry walk and to create small "rooms." The plan includes (A) accessible horticultural table; (B) monkey bars; (C) monkey bars below the structure; (D) tree house; (E) climbing wall; (F) sandbox; (G) stairs; (H) boardwalk; (I) arbor and swing; (J) butterfly mosaic; (K) stage; (L) access ramp; (M) berry patch; (N) sensory plants; (O) play mound; (P) horticultural therapy beds; and (Q) tire balance structure. The view from the "tree house" of the Bugojno garden, *left,* illustrates the multiple benefits the team was able to create. The boardwalk offers full accessibility to several elements, including the raised planters that also support the monkey bars above. The Bugojno site is shown as it was prior to installation of the garden, *below.* Since previous access into the facility was by stairs, several students in wheelchairs or with limited mobility had to be carried into the building. Ruhiyyeh Nelli Newport directs Bosnian volunteers in the installation of a mosaic butterfly, *opposite left.* James Frank guides a Bosnian student who suffers from epilepsy and has limited eyesight, *opposite right.*





Local youths who joined us in the building process gained an understanding of the association...and have continued as volunteers.



limited access into the building. As in Tuzla, CGABH had joined with the therapists and parents to develop a wish list consisting of a stage, raised garden beds, ramp access, swings, play structures, mounds, climbing walls, seating, and sensory and edible gardens. We added a balancing course, a "tree house," a bench swing, boardwalks, a wheelchair-accessible planting table, and a mosaic pathway. Building on our experience in Tuzla, we were able to develop a more ambitious design. Fitting all of the elements within the small site and establishing a flow across the existing paved entry path were the main challenges.

The design solution created an accessible path and ramp system both to bring all participants into the facility and to link the spaces on either side of the existing entry path, creating a single legible space. To the north the path, inlaid with blue tile butterflies, arcs around a four-foot-high lawn mound and becomes a wooden ramp accessing the existing raised front porch. A second concrete ramp connects the porch to the building entry. Lined with sensory plants—lavender, sage, and rosemary—

this path will provide a pleasant, stimulating passageway for those entering the association. Flanking the path are two four-by-eight-foot raised planters for the horticultural therapy program. The planters frame the entry to a lawn area equipped with balancing tire structures for physical therapy. The porch opens onto a 100-square-foot stage. Stage, ramp, and mound were designed as integrated components for dramatic productions, play activities, structured learning, and rehabilitation activities.

Crossing the existing entry path to the south, the path continues in concrete then transitions to a raised wooden boardwalk. Wheelchair users can garden side by side at a cantilevered work table and raised planter with participants who stand along the boardwalk. Posts on the boardwalk support a set of monkey bars above and stairs that lead to a tree house. Limited space precluded construction of wheelchair access, but the majority of the participants are able to climb, and the tree house has an open design to allow visual contact with any wheelchair participants below. Beneath the tree house is another set of monkey bars sized for the younger participants. In addition, the boardwalk leads to an arbor bench swing, sandbox, and climbing wall.

The Leptir garden was an ambitious project to build in two weeks. The team refined the schematic site design in three days, leaving 10 days for construction. Similar to Tuzla, we recruited many young volunteers. Program participants and their parents and siblings helped in the garden construction. One father provided welding, concrete was donated by a local contractor, and parents and children moved soil into the site. The schedule was challenging and the workdays were long, but in Bosnian culture socializing is fundamental to the daily routine, and refreshing breaks were woven into the work. Through wonderful interchanges we got to know one another, compare differences between cultures, and attempt to comprehend the horrible effects of ethnic cleansing. This engagement strongly reinforced for our team the real value of our efforts, which can get lost in the frenzy of building. Days before we finished the project, the mayor of Bugojno invited us to his office, thanked us for our efforts on behalf of the disabled children, and committed his support to Leptir and its programs. Parents showed their deep appreciation at the dedication with home-baked local delicacies and handmade gifts and by sharing thoughts of the war and the challenges of raising their children with meager resources. We watched a mother guide her deaf and mute daughter to traverse the balance course. The girl's triumphal shrieks and the mother's tearful smile summed up the garden's benefits.



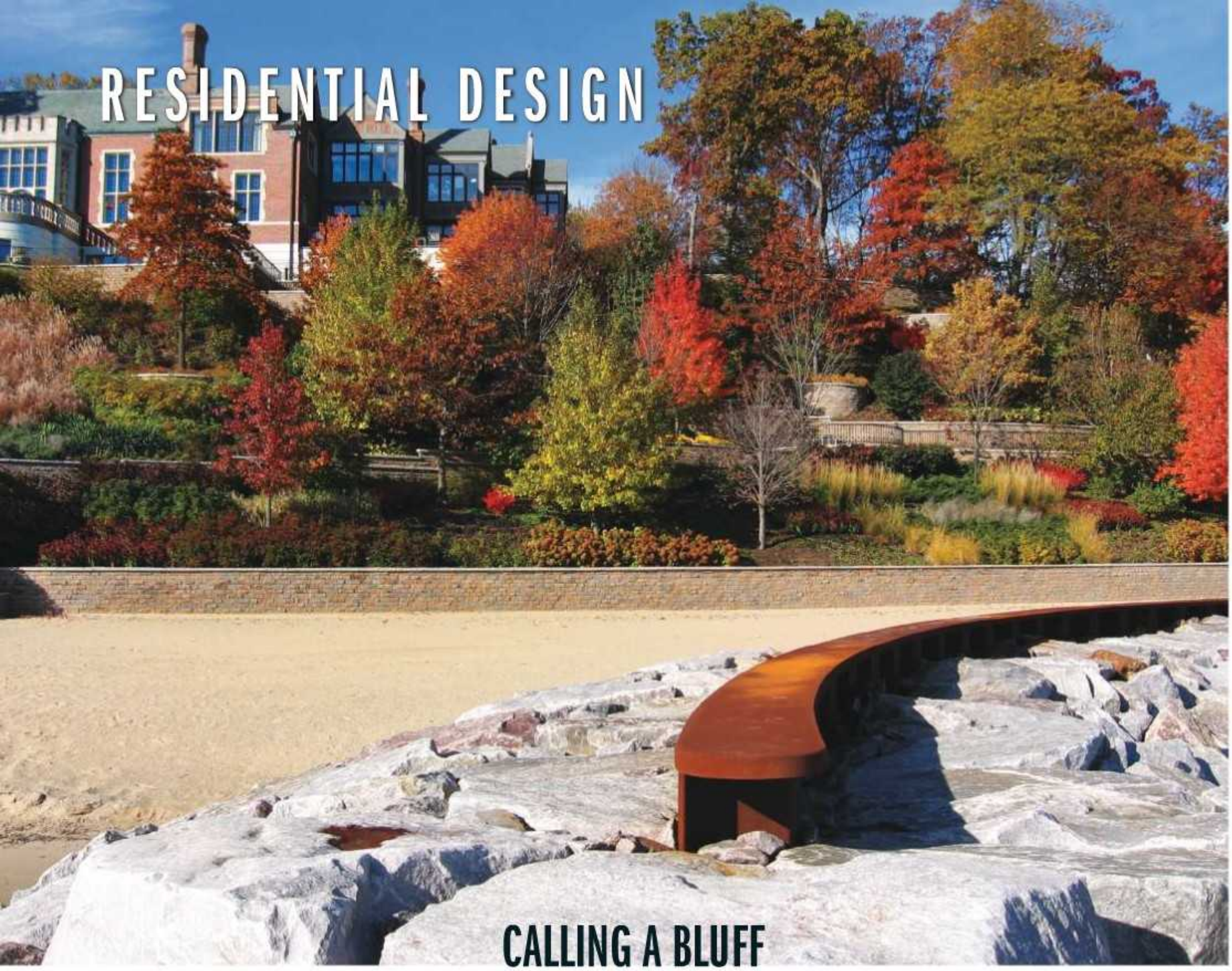
Vesna Malenica, AFSC project manager in Bugojno, assists an association participant with cerebral palsy up the entry ramp.

Through these international design/build programs, students become ambassadors for the landscape architecture profession in countries where our practice is little known but urgently needed.

When CGABH announced that it was offering training in horticultural therapy and garden design, 60 local organizations applied for project assistance. In seeking garden sites, CGABH reviewed 22 proposals. By partnering to build these first two therapeutic gardens in BiH, we hope they will be replicated by trainees elsewhere in the country not just for children with disabilities, but for veterans rehabilitating from post-traumatic stress disorder, women recovering from war atrocities, and others missing home and family or deprived of useful work. These gardens and the programs they support can reestablish stable, safe, and nurturing environments and communities. Multiple interventions no doubt will be needed over generations to heal this ethnic conflict. Our involvement coalesced around a shared interest in the therapeutic benefits of nature. Through these international design/build programs, students become ambassadors for the landscape architecture profession in countries where our practice is little known but urgently needed. The community design/build process we apply is well adapted to these small-scale, need-driven projects of placemaking. They succeed to the extent they go beyond being a handout of skills and labor to become an exchange of creativity and resourcefulness, understanding and goodwill. LAM

Daniel Winterbottom, ASLA, is an associate professor in the department of landscape architecture at the University of Washington. Winterbottom will be taking students to Croatia this fall to design and build a healing garden. For further information see http://larch.be.washington.edu/features/international/international.php.


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CALLING A BLUFF

A Chicago-area landscape architect seeks to stabilize and restore a degraded slope—by removing all the trees. By Adam Regn Arvidson, ASLA

THE LAKE MICHIGAN SHORELINE north of Chicago is known (appropriately) as the North Shore. It's a beautiful, almost arrow-straight strand that looks east across water seemingly vast as an ocean. It has significant topography: a ravine-laced highland ending in an abrupt bluff that offers expansive un-Midwestern views. The bluff, due to the natural processes of wave action and groundwater movement, has been gradually eroding into the lake for thousands of years. That wouldn't be a problem if no one lived here.

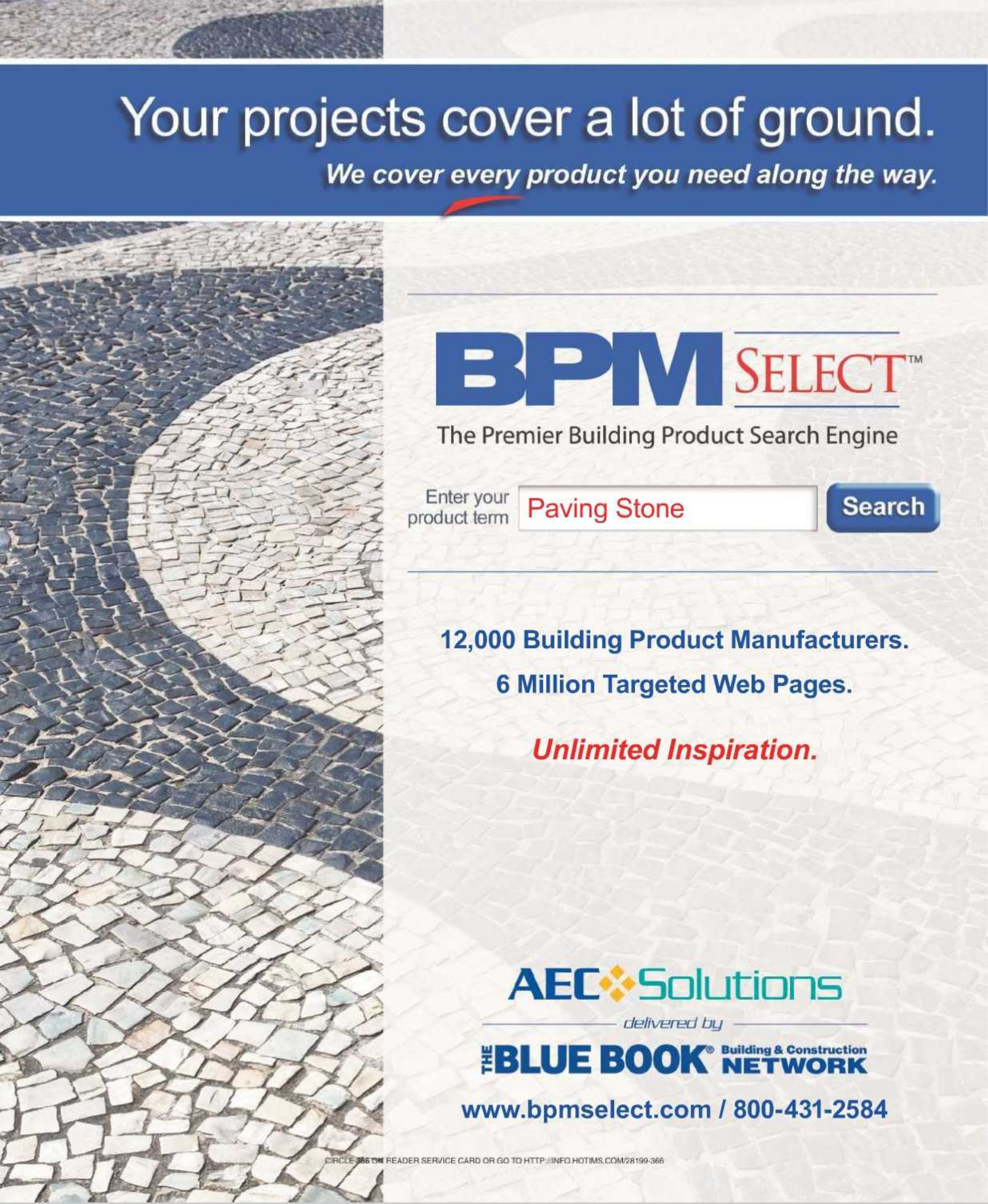
But the North Shore includes some of the wealthiest towns in the nation: Kenilworth, Evanston, Highland Park, Lake Forest. It is a stretch of ultra-high-end real estate, complete with European-style mansions, twisting leafy streets, and monumental gatehouses. It is the playground of entrepreneurs, CEOs, and celebrities. So eroding bluffs, natural or not, are a problem.

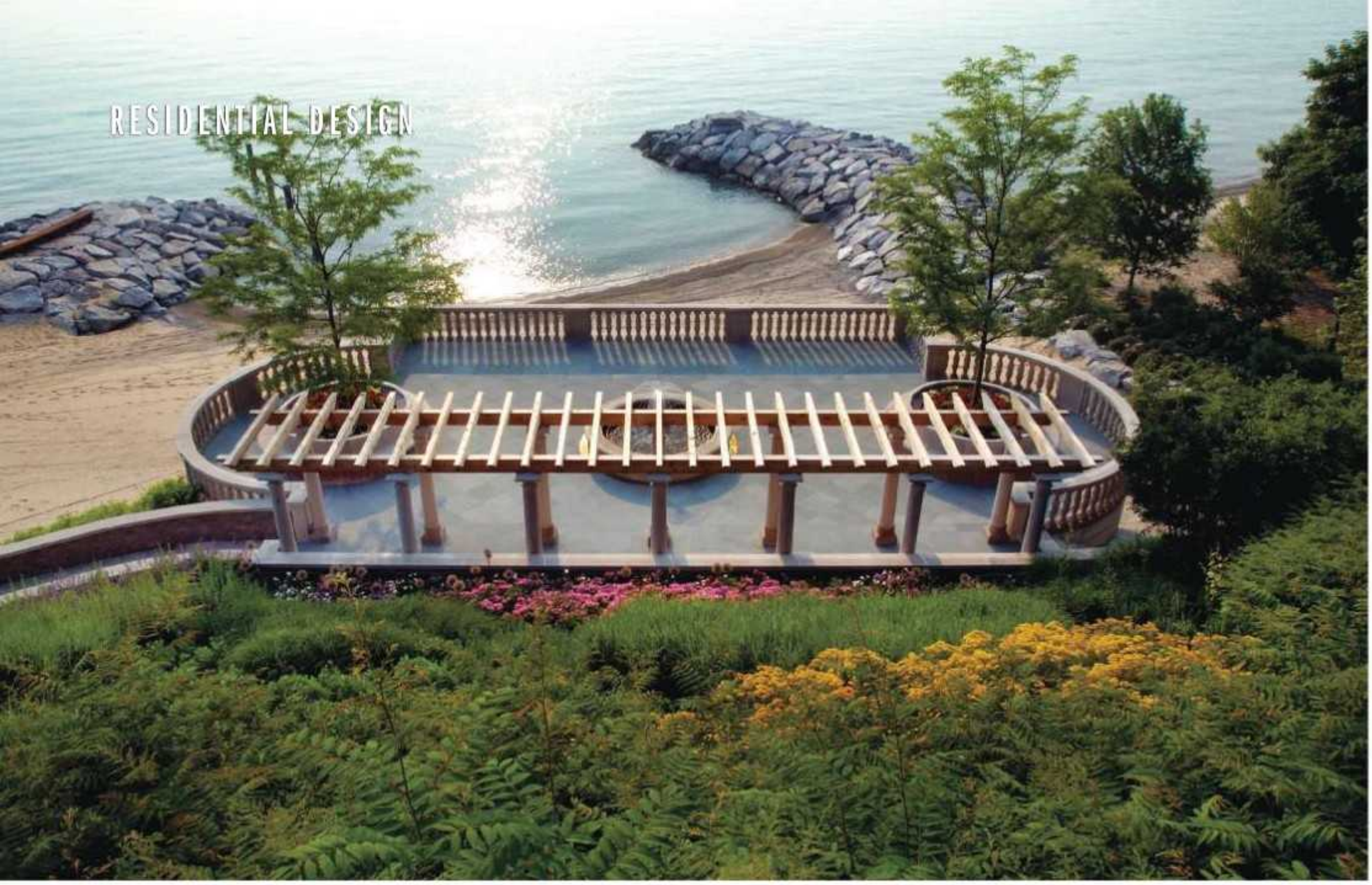
For many years, trees have been the answer for most North Shore communities. Strict ordinances have forbidden the removal even of invasive buckthorn, for fear that elimination of soil-grasping roots would cause massive California-style landslides. It was a bit of a departure from the norm, then, when one owner in Lake Forest decided to defy local codes and denude his lakeside bluff—in the dual interests of creating usable space and stabilizing the slope itself.

This Lake Forest Estate was designed by Nancy Hannick, ASLA, who works solo from her Highland Park, Illinois, home under the moniker NLH Landscape Architects. She was recommended to the client by Charles Shabica, a bluff, shoreline, and

SHABICA & ASSOCIATES INC.

All along the edge of Lake Michigan north of Chicago, high bluffs are slowly eroding into the water, which threatens the high-end homes perched atop them. At one such estate in Lake Forest, NLH Landscape Architects replaced degraded forest with an Italian villa-inspired landscape.


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New pathways descend the slope to a terrace atop a boathouse, *above.* Stabilizing the slope required the controversial removal of nonnative trees, *below left* and *below right;* extensive in-slope piping, *below center,* and geotextile wicks; and an annual blanketing of the entire bluff, *left.*

ravine stabilization expert who was working on the estate's waterfront. Hannick produced the first master plan for the project in 1997 and has spent the past decade implementing, tweaking, and adding to that design. Her efforts garnered her a 2006 Honor Award from Illinois ASLA.

The 9,100-square-foot home sits right at the edge of the bluff, its English-manse-inspired bulk peeking from an overgrown forest studded with a few higher-quality oaks. There are bluestone terraces on both







sides and a lower terrace on the lake side that begins a steep but engaging descent to a boathouse (also designed by Hannick) at the foot of the bluff. Between the boathouse and the lake is a wide beach, stabilized by low curving sheet-pile and rock walls designed by Shabica.

Hannick struggled a bit with how to design literally on a bluff, but she saw some precedents halfway around the world. "It was during several trips to Lake Como [in Italy]," she explains, "that I saw how to work with this bluff not as a detriment but as a wonderful asset. I visited gardens like the Villa d'Este and realized they had done this before, so my idea of traversing the slope would work here in Illinois." The primary traverse from the home down to

> **"I visited gardens like the Villa d'Este and realized... my idea of traversing the slope would work here in Illinois." —Nancy Hannick**

the beach was the first thing constructed, in 1999. It plunges down through three switchbacked stair flights then descends farther on a straight run of stairs that slides northward, away from the house. From there, the path reverses course and descends gently to the roof of the boathouse, where a formal garden and arbor are punctuated with two large honey locusts. Later, a second walkway was built that stretches even farther north, providing a secluded view point.

During the journey down from the house, the pathway moves in and out of copses of trees, hiding and revealing the lake and creating both warm sunny and cool shady stretches. The walls along the stairs and pathway are of modular concrete block, chosen due to the precarious nature of the bluff (the first phase was built by workers lowering blocks down the slope in wheelbarrows). Wall caps and stair and pathway surfaces are Lannon stone. Occasional wrought-iron railings tie the landscape back to the aristocratic character of the house.

These switchbacks and walled walkways are nestled into a restored landscape of primarily native trees, shrubs, and perennials, all of which were chosen for their ability to withstand the harsh conditions adjacent to the great lake: later spring warm-up, a longer fall, and intense winter winds. The owner was interested in having the landscape look mature right away, so large trees were brought to the site on a barge and set in place by crane (with Hannick hanging from the basket to direct precise location). Sugar and red maples, serviceberries, hawthorns, and oaks are joined by witch hazel, viburnum, stephanandra, and spirea. Perennials include yarrow, aster, daylilies, coneflowers, and salvia (see "Slope, Ravine, and Beach Restoration," page 112).

The overall effect is one of intricacy and formality. This is not a contemporary design, and it was never intended to be. The modular block has a rough, stonelike character that veers toward the classical, with the railings and stone caps completing the motif. The walkways have long straightaways and gentle curves that give the design a monumental scale. The boathouse roof draws directly from the aesthetic of the main house, while the upper terraces are a creative hybrid of English manor garden and Italian villa.

That said, though the modular concrete block was certainly the right choice for constructability and character, the color—a swirled dark gray and pink—matches poorly with the elegant Lannon stone caps and treads. It seems just a bit off the shelf relative to the quality of the rest of the design.

The real meat of Hannick's labor of love, however, isn't the careful stair, walk, and wall grading, the naturalistic landscape plan, or the selection of materials. It is that she accomplished all this in the context of a highly technical and innovative slope stabilization—that is completely buried.

Initial soil borings revealed a series of sand lenses that were moving water out of the face of the bluff. Cracks in the soil at the top of the bluff near the house were a sure sign of instability. As Shabica puts it: "We had water coming out the sides of the bluff, water coming over the top of



The restoration of the bluff created usable space above, below, and on the slope, which was replanted with native shrubs, perennials, and trees, *below*. An arbor atop the boathouse, *above*, serves as a gateway for walks traversing the slope.

the bluff, and waves at the bottom." It was at that point that wholesale reengineering of the slope became necessary.

Sheet pilings were driven at the top of the slope near the house and at the bottom. Another line of sheet pile was installed later when the terrace on the lake side of the house was built. The bluff, by this time, was completely denuded. Mass excavation was taking place to accommodate geogrid for the modular retaining walls. This had the additional benefit of adding significant granular material to the bluff, which helps water drain downward rather than out the face of the slope. To further move water through the soil, long collection tubes were drilled vertically and horizontally into the slope from several outlet points. These were stuffed with geotextile wick drains and connected together, so water would empty into the lake rather than create new ravines in the bluff face.

The tree removal was the risky part. There is a catch-22 in bluff restoration with regard to trees. Large trees eventually shade the ground so deeply that the soil-hugging shrubs and perennials die off, leaving the earth exposed to erosion. Trees do, however, intercept some water before it reaches the ground and do themselves hold soil. But when the forest is a tangled mass of invasives and native trees hanging on to eroding soils for dear life (like both of the Lake Forest Estate's next-door neighbors'), there does seem little value in keeping it around. The owner, for his part, invested in making sure his bluff would be better off for the tree removal. The slope is now a mass of perennials that blanket the soil almost completely and are busy growing deep roots. And each winter from 1998 to 2003 (when the last of the landscape was installed), he paid to have the entire denuded slope covered with an erosion control blanket.

"Taking the trees off the bluff was the only way to properly stabilize it." —Charles Shabica



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Normally, according to Shabica, a native bluff would not have any trees at all. They would not have been able to survive the harsh environment of erosion and collapse. "When we see wooded lakeshore [here on the North Shore bluffs]," he says, "that is a result of human habitation." Which, he believes, isn't necessarily wrong. And the client wanted trees. But from time to time, the understory needs to be rejuvenated, which can't happen in the shade of a tangled forest. "Taking the trees off the bluff," he states, "was the only way to properly stabilize it."

Shabica also says the trees-first philosophy is beginning to change. He has taken part in a symposium at the Chicago Botanic Garden (which is located in the North Shore region) on proper restoration of bluffs and ravines. He published an article on what he calls "the Illinois Experiment" in *Shore & Beach*. And his wife sits on the forestry commission of North Shore community Winnetka—so perhaps there are applicable ears being bent.

Slope, Ravine, and Beach Restoration

CHARLES SHABICA grew up around the ocean and now makes his living as a practicing coastal engineer. He has degrees in geology and evolutionary biology and even worked at Woods Hole Oceanographic Institute. His Chicago-area-based firm, Shabica & Associates Inc., has been tackling shore, bluff, and ravine restoration projects for more than 20 years. When it comes to these fragile, dynamic environments, Shabica stresses the importance of understanding current conditions and not attempting a restoration of a historic environment. "We have to recognize," he says, "that things are not as they were back in the Garden of Eden days. If we restore [a landscape] to what it was then, it won't work, because we are working with a changed environment." He means an environment changed by humans and likely featuring more runoff, different storm frequencies and intensities, and even temperature changes due to global warming.

He has some advice for landscape architects faced with projects involving shore, ravine, or bluff restoration and stabilization.

SHORELINES. For large projects (say, an entire Gold Coast community), Shabica may build a physical model of the shoreline, then use a computer-driven wave machine to test different design ideas in different types of hydraulic conditions. For smaller projects, he relies on a numerical model that exists entirely within a digital environment. In any case, he recommends such modeling as a critical step in understanding the dynamic nature of shoreline waves. It could be the difference, he says, between an over-designed pile-of-rocks breakwater and a lower, simpler solution like that at the Lake Forest Estate. Aside from being less of an intrusion on the ecology and aesthetics of the shore, such a solution may also cost a lot less.

RAVINES. The ravines of the Gold Coast developed and stabilized just after the last ice age, making them what Shabica calls "relic environments." They are home to plants typically found in more northerly climates. Today, these ravines see a lot more water than they once did. The answer, he says, is to look to other, higher velocity streambeds, such as mountain trout streams, which tend to be much rockier. "In the 1990s," he recalls, "we started doing ravine restoration through reintroduction of streambed armor." At the time, he assumed rectilinear blocks would work best, since they would lock together. But, through experience, he learned that rounded boulders placed in key locations are best. They allow for stability of the ravine in both high- and low-flow situations (the blocks are less conducive to plant growth), and they create riffles and plunge pools that oxygenate the water. He also often builds wetlands at the feet of ravines, to further filter water before it enters Lake Michigan (something that also would have occurred historically).

BLUFFS. "Vegetating a bluff," says Shabica, "is very different from vegetating a hill." Bluffs are by their nature quasi-stable environments that are extremely susceptible to erosion by water flowing over and through them. Even a clog in an irrigation system at the top of the bluff can put enough water down into the soil layers to cause the slope to weaken and slide. The key, as is well demonstrated at the Lake Forest Estate, is to move water in predetermined pathways down through the bluff to its base. Without such a drainage network, water will likely blow out of the face of the bluff somewhere, then will erode the fragile soil beneath that blowout. Also important is revegetating the bluff with shrubs and perennials that will hold the soil and dissipate the energy of falling rain. That, as at the Lake Forest Estate, may require removing existing trees, something Shabica says is often justified, since these bluffs would have historically been mostly devoid of them anyway.

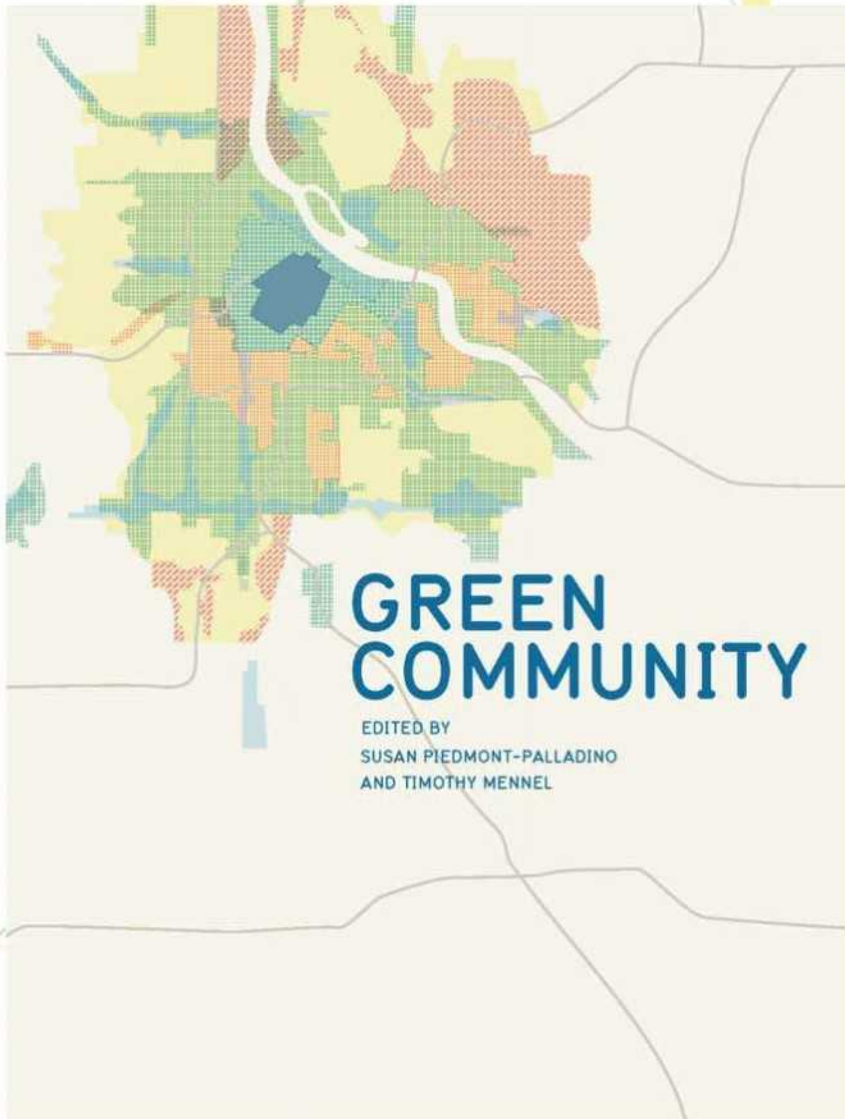


Much of the innovative stabilization techniques happens below the surface. Horizontal and vertical wicks made of geotextile fabric move water through the slope in a predictable way, rather than allowing it to run over the face of the bluff. This ensures that the plants can anchor the surface of the soil, preventing further erosion.

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A NEW BOOK FEATURING ESSAYS ABOUT PLANNING, DESIGNING, AND BUILDING SUSTAINABLE PLACES:

Edited by Susan Piedmont-Palladino and Timothy Mennel, in conjunction with the exhibition *Green Community*, curated by Susan Piedmont-Palladino



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Sir Peter Hall

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F. Kaid Benfield, Fred Hansen, Jonathan Rose, and Robert E. Lang & Mariela Alfonzo

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But if native bluffs were generally tree free, why support the reintroduction of trees? Won't those oaks and maples grow up and shade out the black-eyed Susans? Won't Hannick and the owner of the Lake Forest Estate one day have to start all over again? Both Hannick and Shabica respond that one critical element of the landscape is the client. The owner wanted trees. Forested Lake Michigan bluffs have become the look of the North Shore.

And though it would be hard to suggest that this project, in this location, be (in the interest of true bluff restoration) devoid of trees, it probably doesn't need to be irrigated. Yes, the bluff is adorned with an irrigation system. The complex drainage network, certainly, will prevent watering from having an erosive effect on the slope itself, but adding more water to an already fragile system seems counterintuitive. Most of these plants were selected for their ability to withstand natural bluffside conditions, so why must they be watered? What a statement could have been made if this bluff were native dominated, innovatively stabilized, and unirrigated.



The walks and supporting walls are constructed of modular concrete, *above* and *opposite*, which allowed for easier construction and better addresses natural water seepage.

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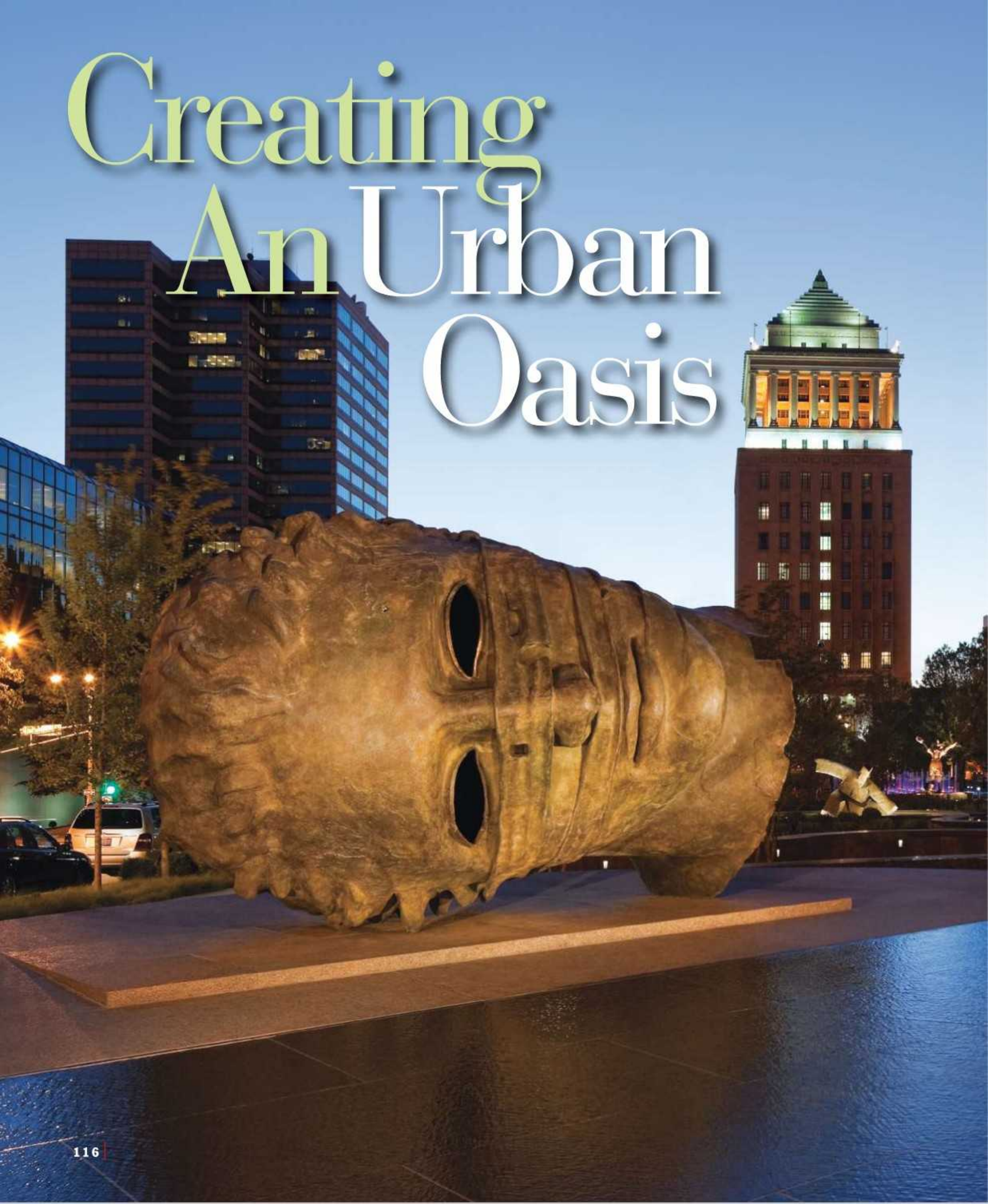
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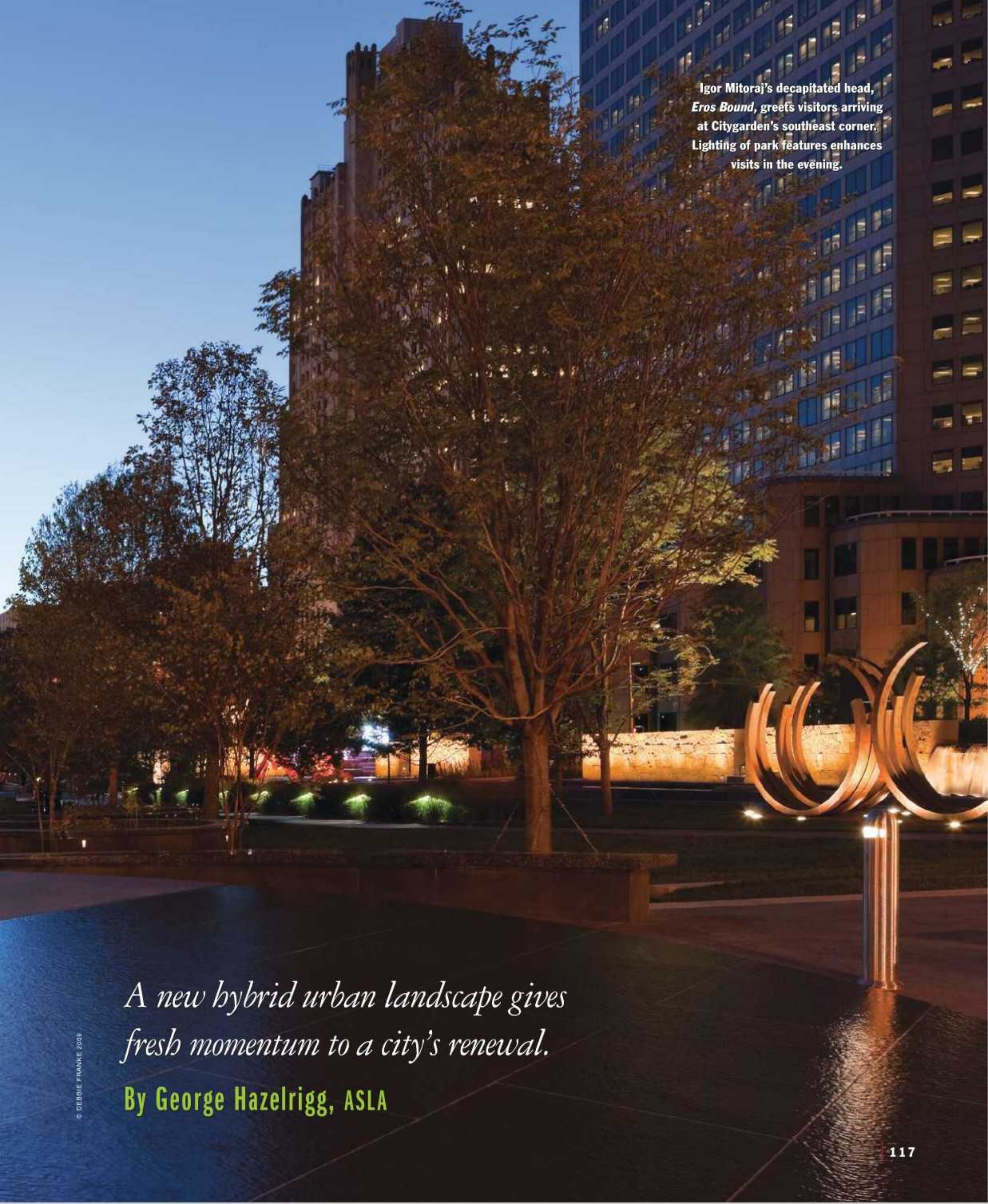
The Lake Forest Estate is an elegant project. Its carefully designed walkways simultaneously address complex grade changes and create comfortable spaces. Its many terraces are well-crafted references to English and Italian design: One has a boxwood parterre; another tucks into the shade of a preserved and coddled signature oak. The detailing, overall, successfully addresses constructability and even at times adds a little whimsy (the white-flowering south terrace sports a "tree man" wall fountain designed by Hannick). The use of many native plants is to be commended—even though these are accompanied by a wide palette of ornamentals. The drainage interventions are effective and innovative and may (owner willing) become a regionwide case study. The project proves that the state of the art in bluff stabilization can be clad in classic European style. That's likely to play well on the North Shore. LAM

Adam Regn Arvidson, ASLA, is interim editor of Landscape Architecture.

PROJECT CREDITS **Landscape architect:** NLH Landscape Architects, Highland Park, Illinois (Nancy Hannick, ASLA, lead designer). **Beach and shoreline consultant:** Shabica & Associates Inc., Northfield, Illinois. **Geotechnical engineer:** Giles Engineering Associates Inc., Waukesha, Wisconsin. **Structural engineer:** Brunzell Associates, Skokie, Illinois. **Landscape contractor:** The Fisher Burton Company, Wauconda, Illinois.

Creating An Urban Oasis

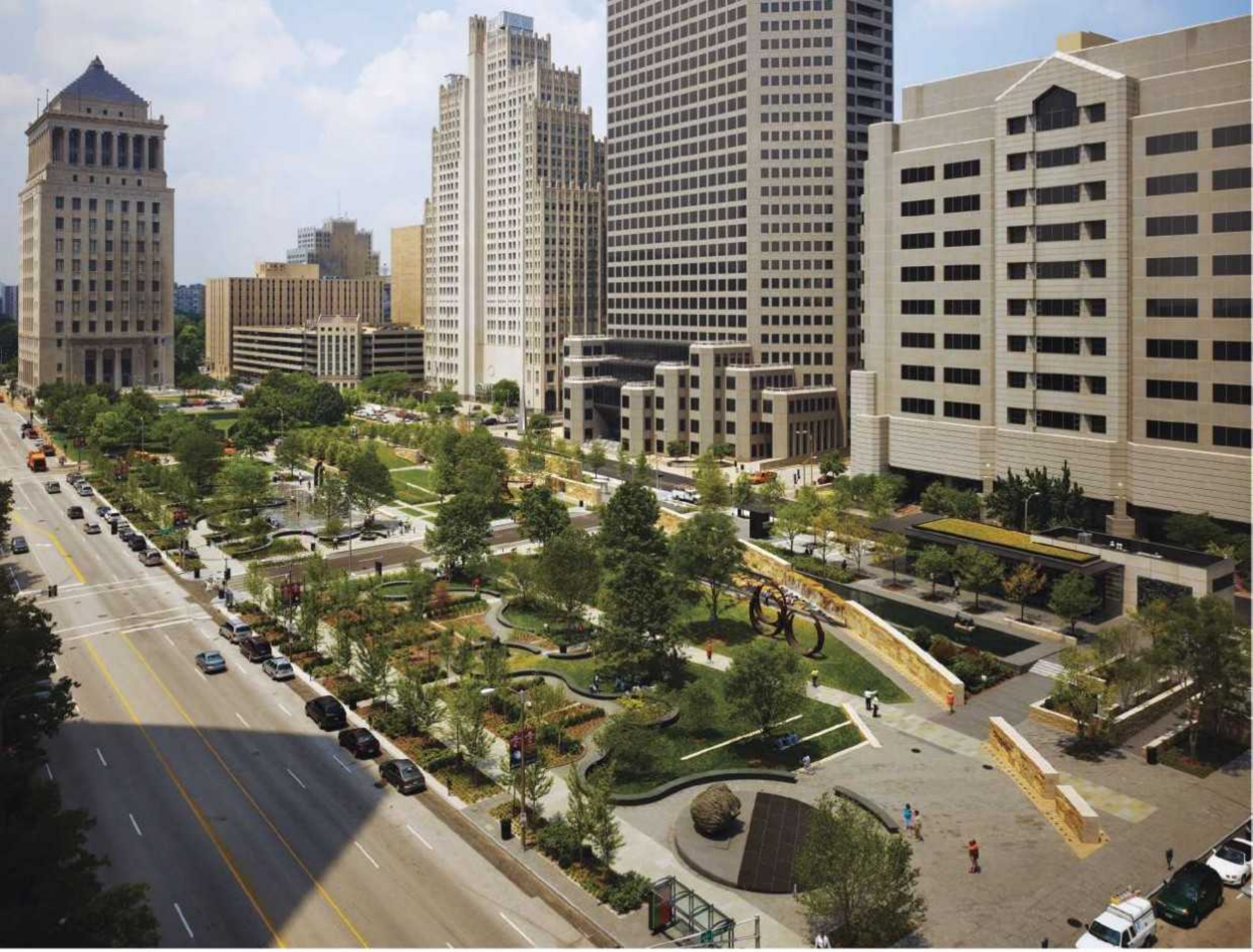




Igor Mitoraj's decapitated head, *Eros Bound*, greets visitors arriving at Citygarden's southeast corner. Lighting of park features enhances visits in the evening.

A new hybrid urban landscape gives fresh momentum to a city's renewal.

By George Hazelrigg, ASLA



WHEN ST. LOUIS launched an ambitious downtown revitalization campaign a decade ago, its action plan identified a 1.2-mile-long, east–west row of sparsely landscaped, mostly vacant city-owned blocks, tagged the "Gateway Mall," as a priority for development. In early 2007, after several other priorities were tackled first, Mayor Francis Slay announced the selection of a design team to prepare a new master plan for the mall (see "Meet Me [Again] in St. Louis, Louis," *Landscape Architecture,* October 2008).

The announcement caused little stir. After all, this was not the first time a mall plan would be prepared; mall proposals date back to the city's 1907 master plan and continued to be made intermittently up through the 1980s. Plans of the 1960s, 1970s, and 1980s lapsed for lack of adequate funding with only partial improvements resulting. The mall remained an unfulfilled century-old dream, the victim of a history of incoherent planning and lack of a consistent concept of what the mall was actually to accomplish. In addition, a loss of more than 500,000 residents between 1950 and 2000, which had left behind a downtown of deserted streets and run-down buildings, had spawned a good number of naysayers.

In June 2007, however, the mayor had another announcement. The private St. Louis-based Gateway Foundation was going to

An aerial view of Citygarden looking toward the northwest, *above,* highlights the 550-foot-long arced limestone wall, a 1,100-foot-long granite "meander wall," and the imposing AT&T buildings to the north. A final labeled plan drawing, *opposite top,* shows Citygarden's division into three east–west bands and its bifurcation in the middle by Ninth Street, which is closed to vehicles during the park's active times. On the west side, a spray plaza with 102 vertical jets, *opposite bottom,* draws crowds of children on hot days. The City Courts building is at the western end.

COURTESY GATEWAY FOUNDATION. PHOTOGRAPHER STEVE HALL, HEDRICH BLESSING PHOTOGRAPHERS



Citygarden will be open year-round, with no perimeter barriers and no fees.



NELSON BYRD WOLTZ LANDSCAPE ARCHITECTS, TOP; COURTESY OF ARCTURIS, PHOTOGRAPHER DEBBIE FRANKE, BOTTOM



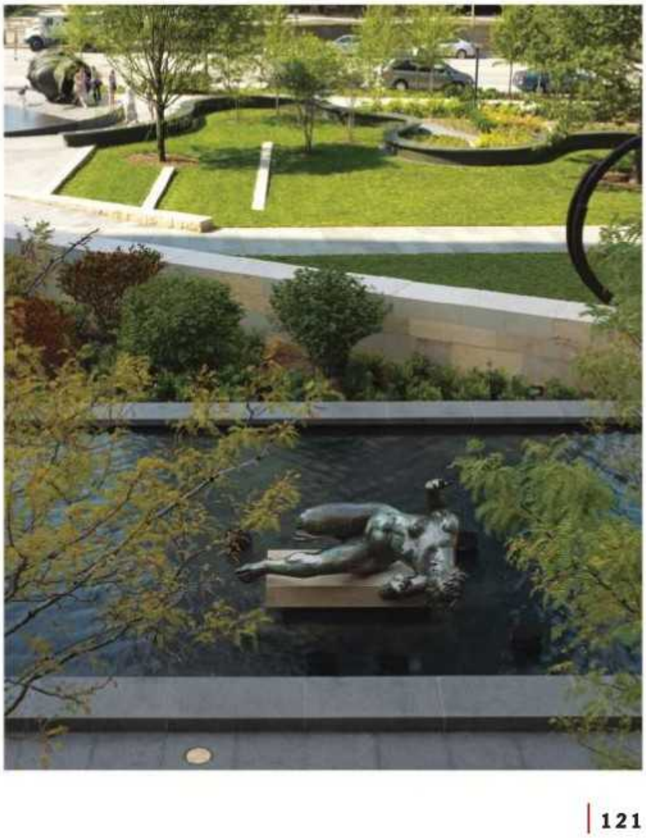


The goal was to create a hybrid "oasis," both botanic garden and city park.

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finance the design and construction of a "world-class sculpture garden" on the mall between Eighth and Tenth streets. In addition, it planned to place 24 pieces of nationally and internationally renowned sculpture on the site and would pay all ongoing costs of the garden except for electricity and water that the city would provide. Nelson Byrd Woltz Landscape Architects (NBWLA) in Charlottesville, Virginia, was selected as the project's designers.

That announcement got attention. Something new was finally going to be built on a two-block, 2.9-acre site identified as "urban garden" on the new mall master plan. The private, family-owned Gateway Foundation already had a long history of supporting the arts in the region, including the acquisition and installation of world-class public art throughout the metro area. The estimated costs of the garden through construction would be $25 to $30 million. Ground was broken in April 2008; the buzz among the



The arc wall has a 40-foot break, *opposite,* through which a waterfall cascades six feet from the upper level of a 180-by-60-foot split-level water basin. Visitors entering the park from the east encounter a large sculpture by Bernar Venet, *above,* a crowd favorite with adults and climbing children. The arc wall with the waterfall in the background separates the park's upper "river bluffs" band and the central "floodplain" band. The view south from the upper terrace, *right,* shows the section of the split-level water basin in front of the café that hosts Aristide Maillol's reclining *La Rivière.*



region's residents grew as the site's new topography and hardscape features took shape. After 15 months of complex construction, installations, and plantings, Citygarden opened to the public on July 1, 2009, two weeks before the annual Major League All-Star game was held two blocks away at Busch Stadium.

At a morning on-site ceremony for the media the day before, the construction fences around the site were removed. Henceforth, Citygarden would be open year-round, with no perimeter barriers and no fees. Even before the garden officially opened the next day, some downtown residents arrived with beach towels to relax and watch their kids frolic on an interactive spray plaza. Visitors who streamed to the garden in the following days applauded its accessibility, the absence of "do not touch" signs, and the spectacular stonework, native plantings, and water features.

The *St. Louis Post-Dispatch* editorialized that Citygarden seemed "poised to become one of those rare St. Louis places for all seasons"…and its "appeal reaches across generations." The garden teemed with visitors from early morning until late evening, with an added onslaught during the week of events surrounding the All-Star game. Even with the resumption of school and the arrival of fall weather, the garden remained popular, with people enjoying the sculpture, a kaleidoscope of changing plant colors, and opportunities for quiet walks or to join friends at the garden's upper terrace café.

Syndicated columnist Neal Peirce, who has tracked downtown St. Louis's evolution for more than a decade, wrote in September, "For St. Louis, for years so forsaken its downtown had the feel of a big and mostly empty living room, the public's warm embrace of Citygarden caps a remarkable comeback decade which has seen the center city draw 5,000 (new) residents and more than $4 billion in new investment."

From day one, the goal of the Gateway Foundation was to create a hybrid "oasis," both botanic garden and city park. Although originally described as a sculpture garden, it was instead to be a garden–park that would host a diverse collection of modern and contemporary sculpture. Emphasis would be put on ensuring

Visitors admire George Rickey's *Four Rectangles Oblique* as they stand in front of one of the two larger east–west rain gardens, *above.* A 16-inch-deep pool carved out of the spray plaza's side, *opposite,* is shared by children with Jean-Michel Folon's *Voyage.* Kan Yasuda's 16-foot-high *Door of Return* is located on the spray plaza's northern edge.

COURTESY GATEWAY FOUNDATION. PHOTOGRAPHER STEVE HALL. HEDRICH BLESSING PHOTOGRAPHERS

The garden's sculpture can be freely touched and, where feasible, climbed upon.

Citygarden's openness, a mix of shade and water to accommodate the city's hot summers, and a range of experiences that would provide something for everyone. It was to be a place for fun, a place to enjoy and interact with.

The site offered major challenges. In addition to an uninspiring flat lawn surface, it was surrounded by tall office buildings with no ground-level retail; "one of the most unintelligible urban landscapes in the nation," decried one local critic. The sight line to the city's iconic Gateway Arch, some six blocks to the east, was partially obscured by a tall office building constructed in the 1980s, the sole visible reminder of an earlier aborted and arguably misguided plan to redevelop several blocks of the mall. It also posed innumerable construction challenges. The push to ready the garden by the All-Star game added pressure. According to general contractor BSI Constructors Inc., 400 truckloads of underground debris were removed and 13 miles of electrical, plumbing, and sewer lines were installed.

Last October, NBWLA principal Warren Byrd, FASLA, reflected on his initial impressions the first time he visited the site. One, he said, was what a great location it had, being close to the Arch, the Civil Courts building, and so well centered within the city's downtown. There was also a certain forlornness to the struggling site. Byrd recognized, however, that the immediate surroundings could be a reasonable backdrop to allow Citygarden to establish its own presence and identity.

The city's regional geography, notably its two great rivers—the Mississippi and the Missouri—and their tributaries and limestone outcrops, informed the design from the beginning, as did the downtown's urban grid and mapped reminders of earlier property lines, building foundation walls, and alleyways. During an on-site interview last July, Byrd said that one lesson learned from the experience was not to try to force your design, but rather to look as deep as you can into the locale and the region. "If you bring these out," he said, "you can do some pretty remarkable things."

Early on, the design team decided on a tripartite division of the garden into east–west bands. The northern "river bluffs" band consists of a series of urban terraces beginning at the site's eastern end, where the park's café extends into a terrace with pool overlooking the lower garden. It ends at the site's highest point, a "mound" reaching 10 feet above street level at the western end and covered with 70 river birch trees. Scarlet oak trees line Chestnut Street along the garden's northern edge; a row of honey locust trees will provide shade to the restaurant terrace. Willow oaks adorn a lower "night terrace." The café, designed by St. Louis architect Phil Durham, is a Miesian "glass box" pavilion with a sedum-covered green roof, indoor and outdoor seating for 120 plus a bar,



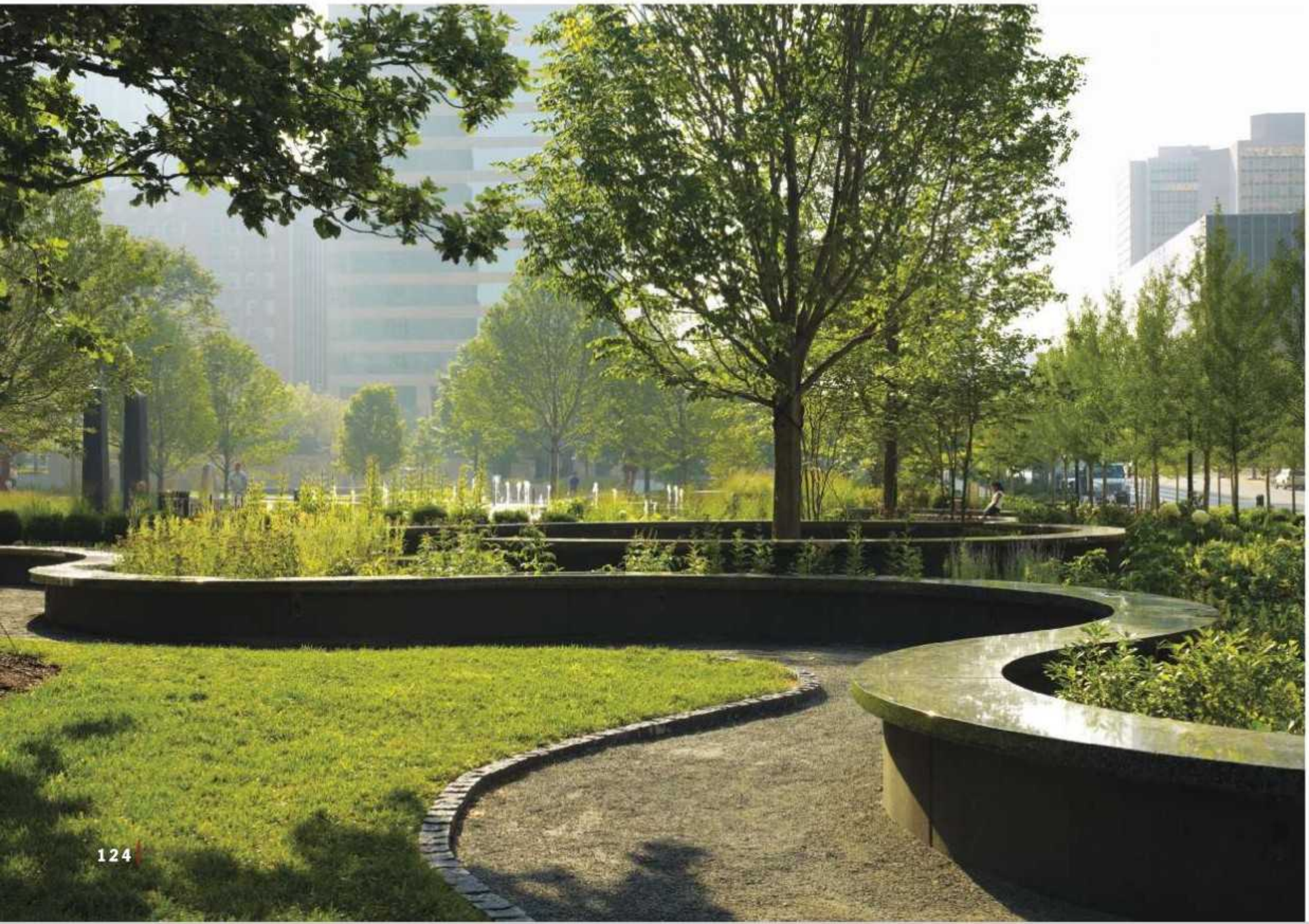
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and Mediterranean-accented local food served by one of the city's most innovative restaurateurs. An unobtrusive maintenance building along Chestnut Street also has a sedum green roof.

The more parklike middle "floodplain" band includes lawn areas, many of the larger sculptures and specimen trees, and two large gardens. An interactive spray plaza, 120 feet long by 36 feet wide, has 102 vertical jets shooting water up to six or more feet high in computer-controlled changing patterns. The water jets are lit and colored at night. A separate 16-inch-deep pool, carved out of the side of the plaza, contains a small sculpture by Belgian artist Jean-Michel Folon. Both the spray plaza and the pool are like magnets drawing crowds of children (and some adventurous adults) on hot summer days. Water in the plaza is recycled through an underground computerized filtration and cleaning system that minimizes the use of chemicals.



The city's regional geography, notably its two great rivers and its limestone outcrops, informed the design from the beginning.



During the winter months, 24 plastic globes, 22 inches in diameter, have been randomly installed around the plaza. At night, the globes are lit by the LED lights in each spray jet, the colors programmed to change every three minutes.

An imposing 550-foot-long arced wall runs east–west the length of Citygarden. Evoking the region's river bluffs, the wall separates the northern band and the central "floodplain" and ties the two blocks of the garden together. At night, the powerful presence of the lighted arc wall is all the more spectacular.

Near the café to the east, the wall intersects a split-level 180-foot-long by 20-foot-wide water basin. The upper portion is a calm pool featuring Aristide Maillol's *La Rivière;* the lower portion is a limestone boulder-filled basin fed by a waterfall that dramatically cascades six feet from the upper level through a 40-foot-wide break in the arc wall. Like the spray plaza, the waterfall and lower basin are popular with children; the waterfall itself muffles the sound of nearby street noise.

In the western block, the arc wall frames a 10-foot-long LED video wall that will play continuous video art curated on a quarterly basis by four of the city's leading museums.

A stepped outcrop of limestone blocks serves as foreground and recalls the stone's quarried origin.

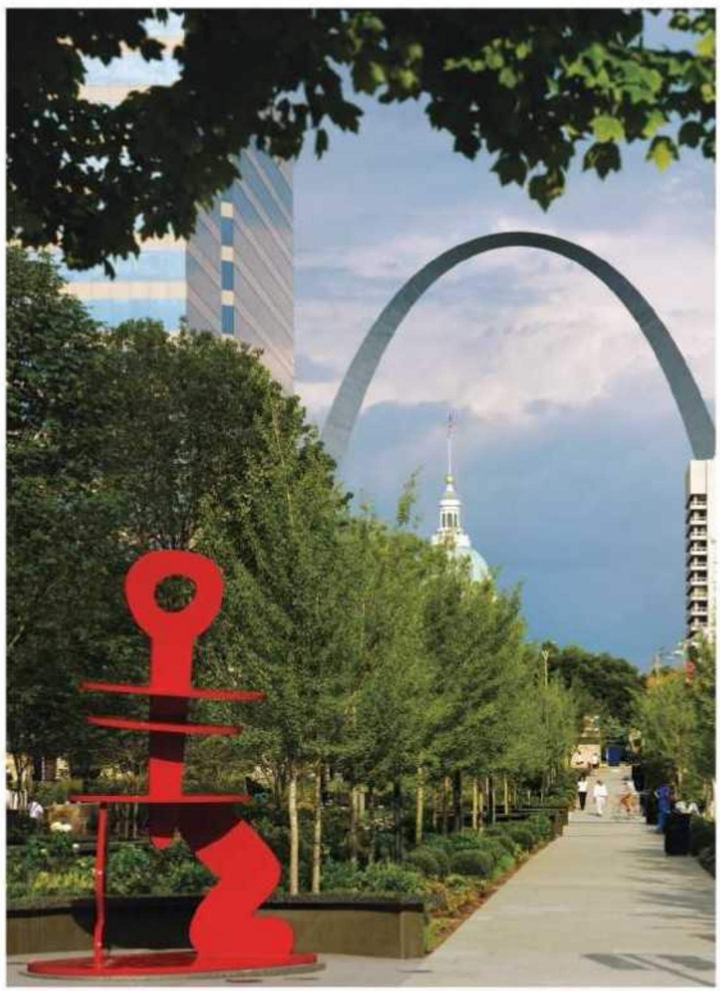
A "meander wall" of polished granite, 1,100 feet in length and running east–west, separates the central "floodplain" from the southern cultivated "River Terrace" band. The wall's path along the zone's rectangular planting beds mimics the path of a river winding through regional farmland. It serves as a seat wall and creates additional spaces for socializing or contemplation. Along Citygarden's southern border at Market Street is an allée of 70 ginkgo trees, someday hopefully to be part of a longer allée extending along the entire east–west length of the Gateway Mall.

Located at the park's southeast corner, Polish sculptor Igor Mitoraj's large decapitated head, *Eros Bendato (Eros Bound),* lies on its side, atop a tilted granite disk mostly covered by a thin scrim of water. The garden offers easy access along its entire perimeter, and the head instantly became a crowd favorite, frequented by couples and families taking photographs and children climbing inside the head and peering out through Eros's vacant eyes.

The site's two blocks remain divided by Ninth Street. The city declined to close the north–south street permanently, but, at least for the early months, it was closed from midmorning to 10:00 PM, and later when there were evening games at the nearby ballpark. In Citygarden's early months, Ninth Street did not appear to be a serious impediment. In addition to the daytime closures, the street was narrowed and does have several pavement changes. More important, the garden's two blocks of diverse spaces and opportunities are effectively tied together by the powerful east–west arc wall and meander wall. A visitor standing at Ninth Street is very conscious of these unifying features.

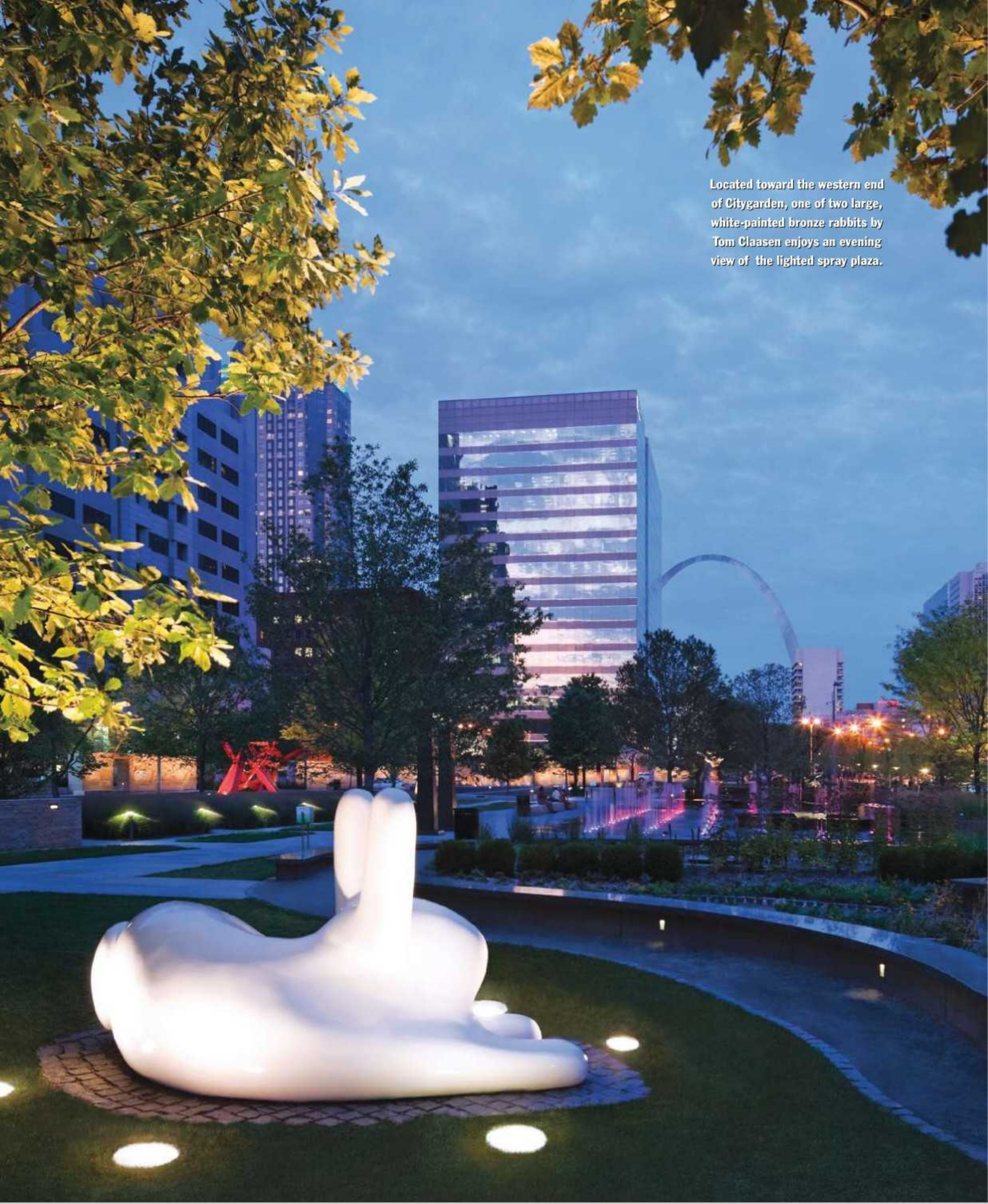
The two dozen works of sculpture placed in Citygarden offer a rich menu for park visitors. The foundation's board, including several current and past leaders from the city's top museums and the regional Laumeier Sculpture Park, and the NBWLA team put considerable effort into the siting of each individual work. The park's landscape makes each work seem comfortable, not only in its designated location but also in its relationship to adjacent works. Despite the diversity of the sculpture in medium, style, and size, there are no clashes between pieces, no sense of something unneeded or contrived. The sculpture is everywhere, but there is no sense of crowding except perhaps for a piece by Niki de Saint Phalle resting in the middle of the café's indoor dining space. Even more unusual, the garden's sculpture can be freely touched and, where feasible, climbed upon.

Citygarden offers visitors an audio tour of the sculpture that can be accessed by cell phones. The narrative on each work and its artist



In warm weather, visitors can enjoy a relaxed meal at Citygarden's popular Terrace View restaurant, *opposite top.* Citygarden's meander wall, *opposite bottom,* separates the southern "river terrace" band from the central "floodplain" band, provides seating for visitors, and forms spaces for planting beds. Keith Haring's *Ringed Figure, right,* stands at the western end of an allée of 70 ginkgo trees running along the southern edge of Market Street. The Gateway Arch and the Old Courthouse dome are visible in the background.

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Located toward the western end of Citygarden, one of two large, white-painted bronze rabbits by Tom Claasen enjoys an evening view of the lighted spray plaza.

is provided by a different local sports, cultural, or civic celebrity. In addition, area musicians collaborated on the composition and recording of original music to accompany the narratives.

The Missouri Botanical Garden worked closely with the design team in selecting the garden's diversity of plants and will continue to consult on the garden's maintenance. The foundation has also contracted with a local arborist to closely monitor the trees for the first two years. Whenever possible, plantings are native to Missouri and include many that offer multiseasonal interest. Where some of the larger trees (six-inch caliper and above) could not be found in the St. Louis region, they were acquired in the Kansas City area, Illinois, Tennessee, and New Jersey. The garden's plant list includes more than 1,100 shrubs, more than 4,000 perennials and native grasses, almost 13,000 ground-cover plants, and some 8,000 bulbs.

> City leaders do believe that the garden will prompt additional investors to select other blocks of the Gateway Mall to develop.

Mature trees were specified, not only to provide an established appearance from the outset, but also to address such issues of scale as the heights of some sculptures at 10 feet or more, and of the tall buildings flanking the site. Together, the elevated terraces of the northern band and the selection of mature trees soften the potential distraction of the massive buildings just across Chestnut Street. In addition to providing essential shade during the city's hot summers, the location of each tree was carefully determined so as to frame and complement the garden's sculpture and hardscape features as well as to shape views of the surrounding city. Each quadrant of Citygarden has a different seasonal focus and will highlight plants that bloom or otherwise stand out in that season.

Anticipating inevitable compaction and drainage issues, the designers and their consultants mapped the entire site for required soil types. In the end, three soil types emerged: soil for use with trees planted in hardscaped areas, an engineered soil for the garden areas and rain gardens, and a sand–soil mix for the fescue lawns. With the exception of the river birch trees on the northwest hill, most trees have their own individual drain pipes that lead to one of six rain gardens as well as a four-inch-diameter pipe delivering air to the tree's roots.

An estimated two-thirds of the site drains into the six rain gardens. In addition to the two larger ones running east–west in the center band, four smaller gardens run north–south on the edges of Ninth Street, collecting both nearby landscape drainage and some street runoff. For the restaurant terrace area, a cast-in-place pier and structural slab system was used to facilitate root growth; in the lower Night Terrace area, smaller granite pavers were installed atop a slab in which drain holes have been drilled. Additional runoff drains to the planting beds of several willow oaks.

Despite the crowds that visited the park during its first two summer months, most of the garden held up well. Exceptions were the turf areas; most have been resodded or reseeded. In addition, rabbits began to take their toll on selected perennials, prompting some changes to more "rabbit-resistant" species.

Standing in Citygarden today, it is hard to believe that in the early 1980s, the western block hosted several buildings, including a Western Union and a Kentucky Fried Chicken. The eastern block served as a surface parking lot. By the decade's end, the two blocks had been razed and converted into a bland landscape similar to much of the mall to the west. While optimism grew among residents as construction proceeded, few could have been prepared for the transformation of the garden that opened last year. And this raises another question. After a century, would this development of two uninspiring blocks of the mall finally lead the way to realizing the full potential for Gateway Mall?

City leaders do believe that the garden will prompt additional investors to select other blocks of the Gateway Mall to develop. According to Tricia Roland-Hamilton, director of the Gateway Mall project, Citygarden has indeed generated interest, and the next mall area to be developed likely will be several blocks to the west, named the "Civic Room" in the new master plan. It will accommodate large festivals, fundraisers, concerts, and other civic events. Planners hope that transformation of the mall's entire length as a vibrant public space will likewise spur new retail and residential development in its vicinity and serve to tie the northern and southern sides of downtown together. LAM

George Hazelrigg, ASLA, is a senior project associate in Virginia Tech's landscape architecture program.

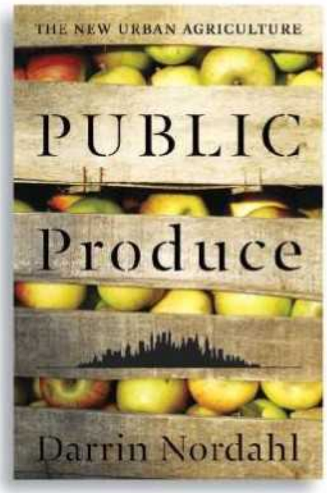
PROJECT CREDITS Client: Gateway Foundation, St. Louis. **Landscape architect:** Nelson Byrd Woltz Landscape Architects, Charlottesville, Virginia (Warren Byrd, FASLA; Sara Myhre; Breck Gastinger; Mary Wolf; Jeremy Jordon; and Paul Posey). **Architect:** Studio Durham Architects, St. Louis (Phil Durham, Darcia Thomas, and Greg Worley). **General contractor:** BSI Constructors, St. Louis (Paul McLeane and Doug Hawkins). **MEP:** Ross & Baruzzini, St. Louis (Paul Carmen). **Civil and structural:** Frontenac Engineering, St. Louis (Steve Miller and Mohamed Al Harash). **Sculpture lighting:** Randy Burkett Lighting Design (Randy Burkett and Susan Jenning). **Electric contractor:** Kaiser Electric, Granite City, Illinois. **Site lighting:** Fischer Marantz Stone, New York. **Site masonry:** Leonard Masonry, St. Louis (Steve Schulte). **Arc wall masonry:** Kirkwood Masonry, St. Louis (Steele Crissman and Dan Head). **Masonry supplier (arc wall):** Earthworks Group Inc., St. Louis. **Fountains:** Hydro Dramatics, St. Louis (Kerry Friedman). **Irrigation:** Irrigation Resource Management Inc., St. Louis (Steve Niehoff). **Soil and subdrainage:** Jeffrey L. Bruce & Co., Kansas City, Missouri (Jeffrey L. Bruce, FASLA). **Sculpture structural:** Larson Engineering, St. Louis (Ted Pruess). **Sculpture installation:** Acme Erectors, St. Louis (Aron Clay). **Plantings:** Landesign, Wentzville, Missouri. **Large tree supplier:** Environmental Design, Tomball, Texas. **Horticultural consultant:** Missouri Botanical Garden, St. Louis (Jim Cocos and June Hutson). **Client's adviser:** Arcturis, St. Louis (Sara Runge).

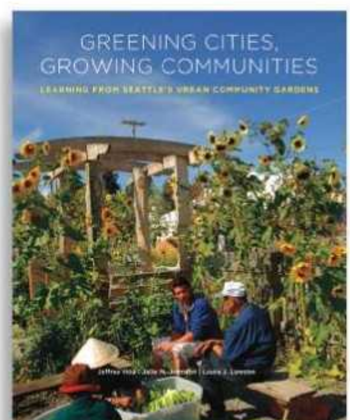
BOOKS

Public Produce: The New Urban Agriculture, *by Darrin Nordahl;* Washington, D.C.: Island Press, 2009; 200 pages, $30; and **Greening Cities, Growing Communities: Learning from Seattle's Urban Community Gardens,** *by Jeffrey Hou, Julie M. Johnson, ASLA, and Laura J. Lawson, ASLA;* Seattle: University of Washington Press, 2009; 232 pages, $40.

Reviewed by Claire Latané, ASLA

FOOD IS A BIG ISSUE, and lately local food seems to be *the* hot topic. Rising gas prices have increased food transportation costs, salmonella outbreaks in large-scale produce farms have raised doubts about the benefits of industrial farming, and programs like Women Infants and Children are changing their policies to support fresh fruits and vegetables for the first time. Two books published in 2009 are aimed at raising understanding around food security issues in city planning and urban design.





Darrin Nordahl's *Public Produce* is a comprehensive look at why, where, and how cities are encouraging and supporting growing food in public spaces. This book is a very current look at cutting-edge policies to provide fresh food in urban places to support social justice. *Greening Cities, Growing Communities,* by Jeffrey Hou, Julie M. Johnson, ASLA, and Laura J. Lawson, ASLA, compares six community gardens established in Seattle during the 1970s oil crisis to illustrate the site design, participatory processes, and lessons learned from each community garden. While both books delve into the topic of growing food on public land, they cover very different and complementary aspects of urban agriculture.

Public Produce is a wonderful primer for students, planners, designers, and activists for food security and urban produce. Nordahl's personal and down-to-earth style will educate and inspire the average citizen interested in food policy or urban design, and his expertise in urban issues will give clarity to professional planners and designers on this complex subject. As part of a small but growing group of local food advocates that includes Gary Paul Nabhan, Michael Pollan, and Alice Waters, Nordahl has produced a work that approaches the subject from the creative new angle of producing food in very public places. He draws from his own experience as a landscape architect and city designer to give a deep view into progressive urban food policies and how they work to change the way cities look and function. Cities like Davenport, Iowa, and Berkeley, California, are promoting rather than preventing public food with programs that install and maintain produce in plazas, parks, and parkways. Nordahl uses examples from Davenport, where he serves as city designer, and Berkeley, where he earned degrees in landscape architecture and urban design, to illustrate the physical outcome of creative planning policies and their positive effects on food security.

Greening Cities, Growing Communities takes a deep look at the old tradition of community gardens in the United States and assesses six well-established gardens in Seattle. Hou, Johnson, and Lawson have put together a thorough and beautiful look at a collection of community gardens built and maintained under very different conditions. This book will help those planning or advocating for community gardens understand a wide range of implementation and maintenance issues, from the temporary status of most community gardens to the vital, ongoing participatory planning process. And the authors make a compelling case for the benefits of community gardens as public space to serve social justice, ecological health, and active living. The six gardens were chosen for their diverse and distinct characteristics and will serve well as examples for cities facing similar issues: gentrification, multicultural communities, an elderly citizenry, or changing needs over time. Graduate students and faculty of landscape architecture programs will especially appreciate this tightly organized case study.

Just five years ago it was rare to find anyone discussing urban agriculture as related to landscape architecture. Here we have two valuable additions to the library offering focused looks at very different aspects of this timely topic. Where *Public Produce* opens the door to the most innovative policies and programs being explored by progressive cities, *Greening Cities, Growing Communities* thoughtfully compares the designs and uses of community gardens in unique situations, from a redeveloped farm on the city's edge to a steep slope owned by a private citizen and city agencies. Rethinking city streets, parks, plazas, and vacant lots as places to produce food where children and adults alike can participate in the growing and harvest cycles themselves is quickly becoming central to addressing the converging concerns of social justice, ecological health, and public wellness.

Claire Latané, ASLA, practices landscape architecture as the sustainable design manager for **EPT**DESIGN *in Pasadena, California, and teaches a senior landscape design studio at Cal Poly Pomona.*

Michael Van Valkenburgh Associates: Reconstructing Urban Landscapes, *edited by Anita Berrizbeitia;* New Haven, Connecticut: Yale University Press, 2009; 320 pages, $65.

Reviewed by Lake Douglas, ASLA

APART FROM OTHER recent presentations of professional work that contain little more than self-serving text and seductive eyewash, this book—a survey of 12 projects of various scales and urban situations dating from 1992 to the present from Michael Van Valkenburgh Associates (MVVA)—is worthy of close examination and reflection.

Organization, content, and presentation are all well realized here. Begin with the insightful introduction, in which editor Anita Berrizbeitia establishes the context of contemporary landscape architectural practice in America over the past two decades, laying the foundation for the projects that follow. According to Berrizbeitia, the projects here reflect four significant changes that demonstrate the growing complexities of contemporary professional practice: involvement by the design firm early in the planning phases for public projects; remediation technologies that have evolved from technical operations into generative elements of design; the incorporation of ecology and nature ranging from the "purely pragmatic to the purely symbolic" as design components; and design form "conditioned by many criteria outside traditional landscape vocabularies," including economic, environmental, community-based, and program-oriented requirements.



Many of the 12 projects presented here (such as Mill Race Park, Allegheny Riverfront Park, Wellesley College's Alumnae Valley, and Teardrop Park) will be familiar since they have appeared in *Landscape Architecture* as well as other design journals. Most are built projects; one (Brooklyn Bridge Park) is presented as a master plan for future development, and two (High Line and Toronto Port Lands) are competition entries, one of which (Toronto Port Lands) is now in progress. Projects are presented in a format that includes introductory multipage photo spreads, essays from design critics, illustrative images, plans, and, occasionally, models, diagrams, and construction details. All work together to discuss each project in a comprehensive way from original site conditions through design conceptualization to construction, use, and, often, postoccupancy assessment. Each project is a self-contained review, and one need not necessarily move chronologically from one to the next.

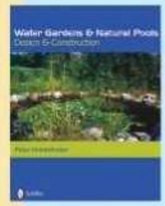
The essays are well written and informative, with (thankfully) few missteps into design-speak obfuscation. Essayists are best when they are straightforward. For instance, Jane Amidon describes Mill Race Park as being about "the circulation of water, a kind of wet program, and the accommodation of people, the dry program"; Eric de Jong's perceptive comments about Teardrop Park's "intense materiality...spatial techniques...[and] sense of intimacy with nature" provoke thought; and Ethan Carr's observation that in Brooklyn Bridge Park "the experience and contact with water permeated the design ideas presented in the master plan" is borne out in multiple ways as the master plan unfolds.

Thoughtful analysis such as what's here is not often found in our profession, and this book should be informative for design professionals and those in the academic arena. It has merit now in its review of recent projects, and it will likely remain valuable for its documentation of projects that mark important shifts in design strategies, innovative placemaking, and American professional practice. LAM

Lake Douglas, ASLA, is associate professor at LSU's Robert Reich School of Landscape Architecture in Baton Rouge, Louisiana.

NOTEWORTHY

WATER GARDENS AND NATURAL POOLS: DESIGN & CONSTRUCTION, ***by Peter Himmelhuber;*** **Atglen, Pennsylvania: Schiffer Publishing Ltd., 2009; 156 pages, $34.99.**



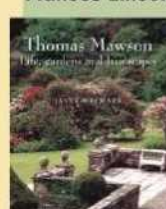
THE FASCINATING and sustainable natural swimming pool trend, which has its roots in Germany, is one that landscape architects should watch closely. A growing body of information is out there, and a few companies are starting to supply specialized equipment in the United States. Unfortunately, this book is an incoherent ramble through the practice. Rather than focus on natural pools, it tries to cover all types of water gardening, becoming likely too elementary for most practitioners.

FRESH POND: THE HISTORY OF A CAMBRIDGE LANDSCAPE, ***by Jill Sinclair;*** **Cambridge, Massachusetts: The MIT Press, 2009; 192 pages, $29.95.**



THIS IS AN exhaustive and well-written history, filled with maps and historic and contemporary photographs, of a 371-acre open space in Cambridge, Massachusetts. The book raises the design-versus-engineering debate (the Olmsted firm's 1897 master plan was never really implemented), asks what "nature" really means in a dense metropolis, and considers the use (and overuse) of public parks. The narrative is strictly about Fresh Pond, but Sinclair also succeeds in creating a case study of universal issues facing the landscape architecture profession.

THOMAS MAWSON: LIFE, GARDENS, AND LANDSCAPES, ***by Janet Waymark;*** **London: Frances Lincoln, 2009; 240 pages, $60.**



THOUGH HIS NAME may not be familiar to American landscape architects, Thomas Mawson was a prolific garden designer in Europe in the late 1800s and early 1900s and is credited with naming the "arts and crafts" style of garden design and advocating for landscape architecture as a profession. This full biography, which should appeal to garden history buffs, includes period and contemporary photographs along with some plans.

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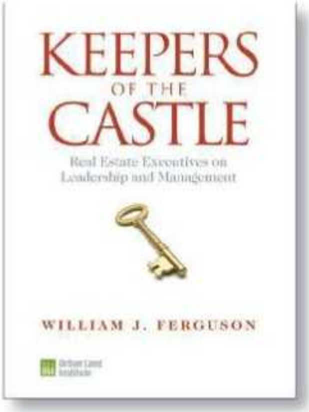
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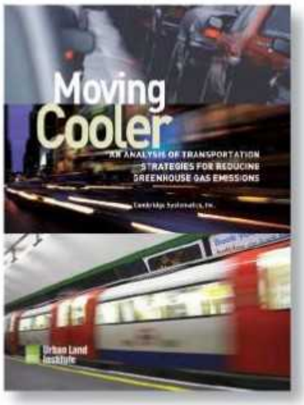
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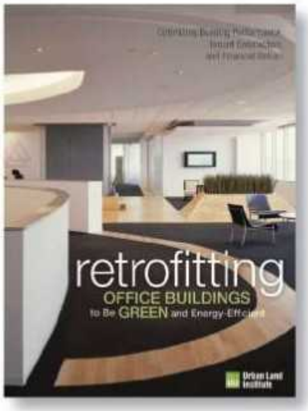
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Leanne Tobias and George Vavaroutsos, et. al.



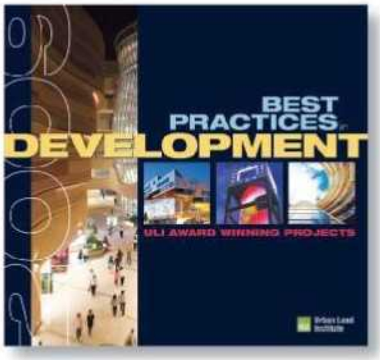
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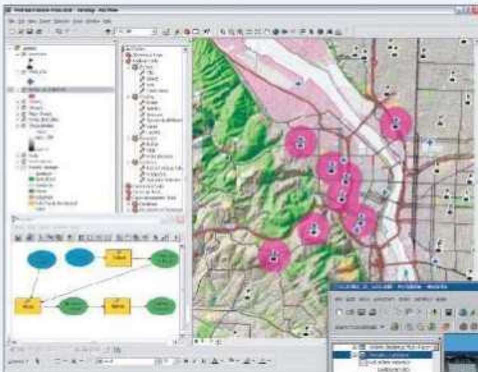
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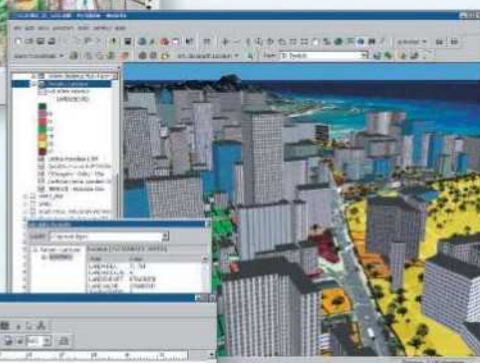
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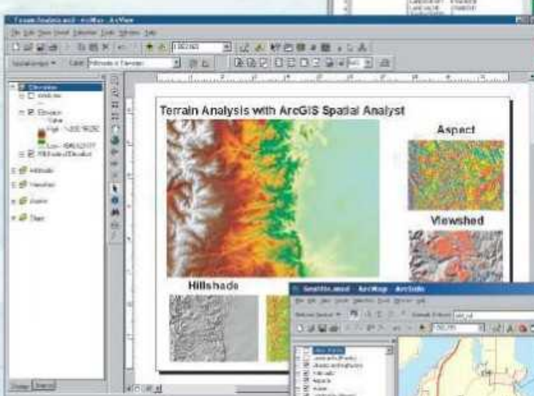
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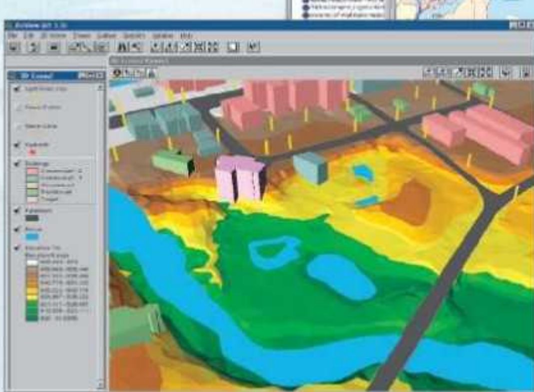
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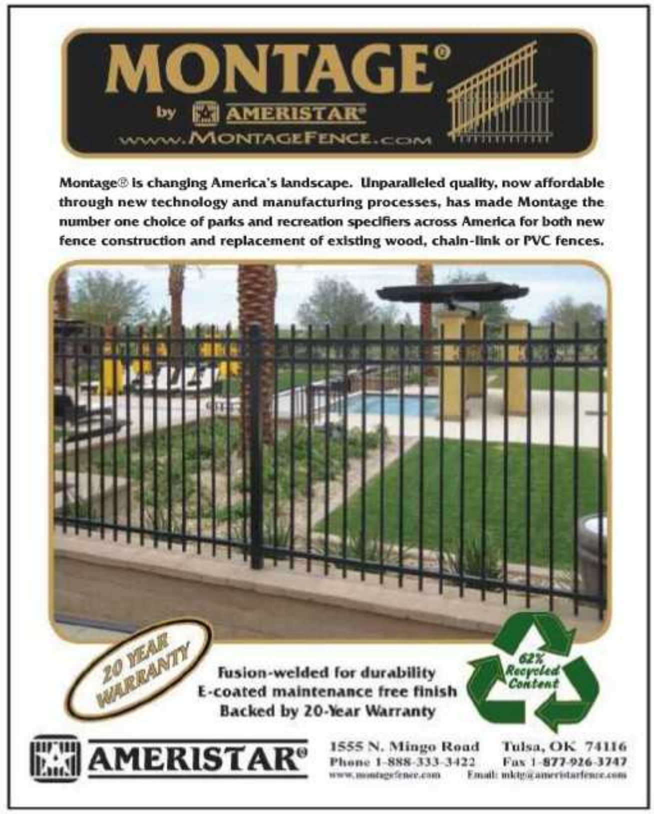


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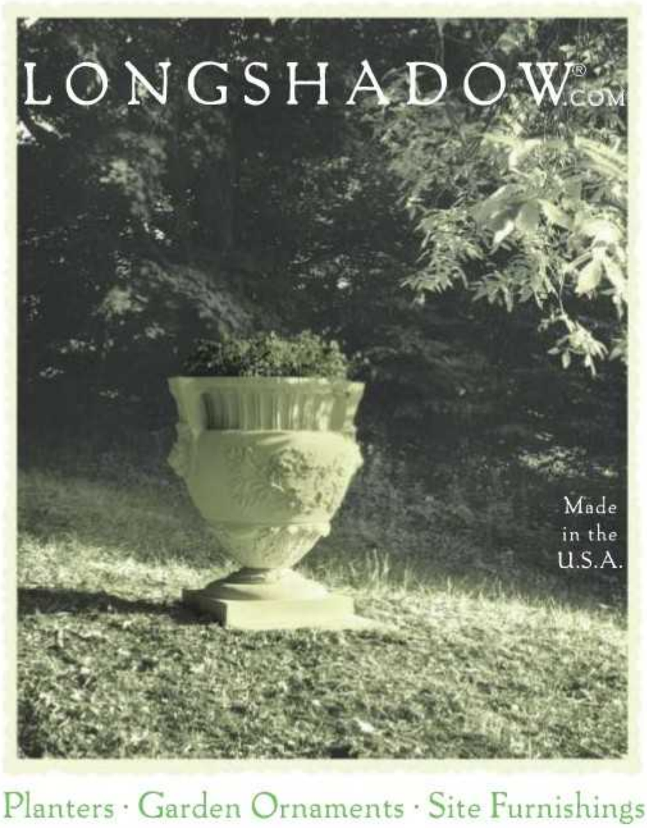
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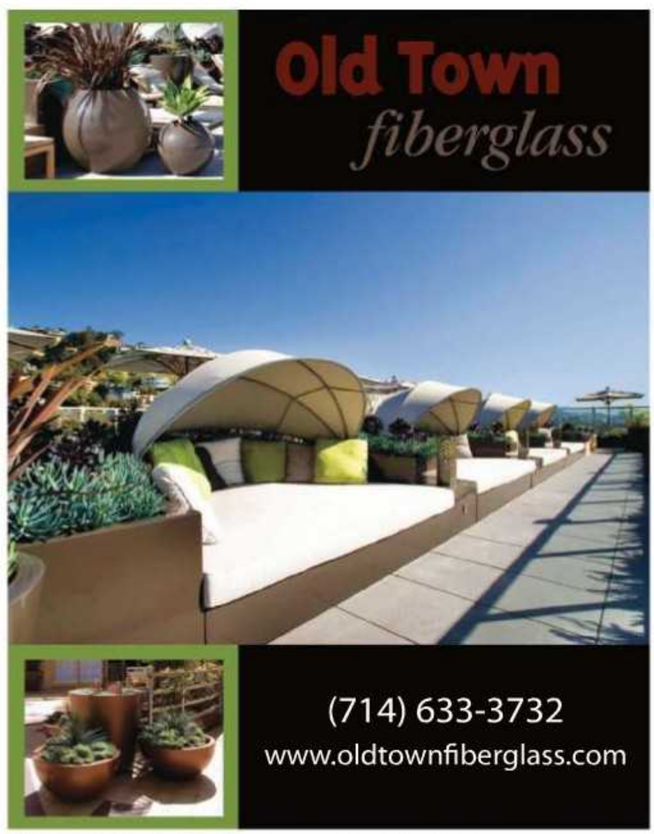
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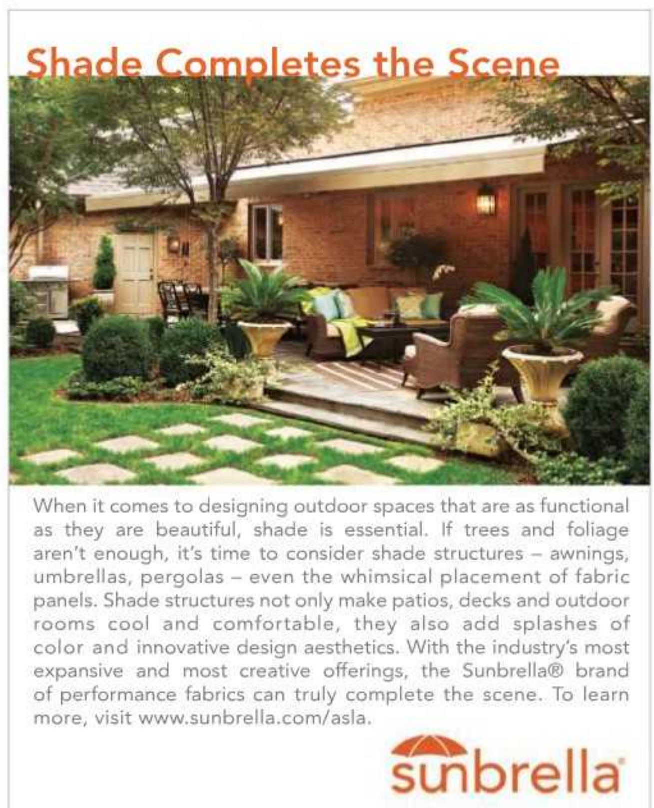
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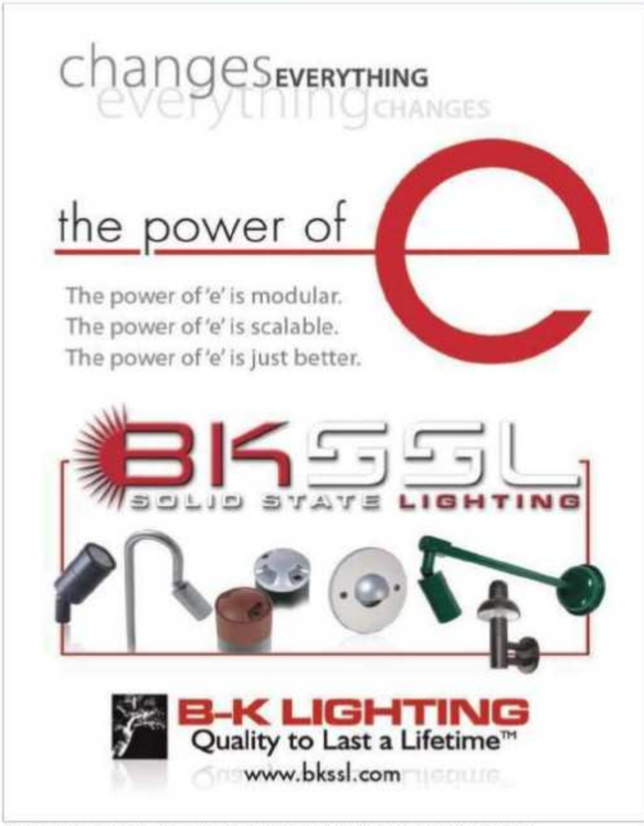
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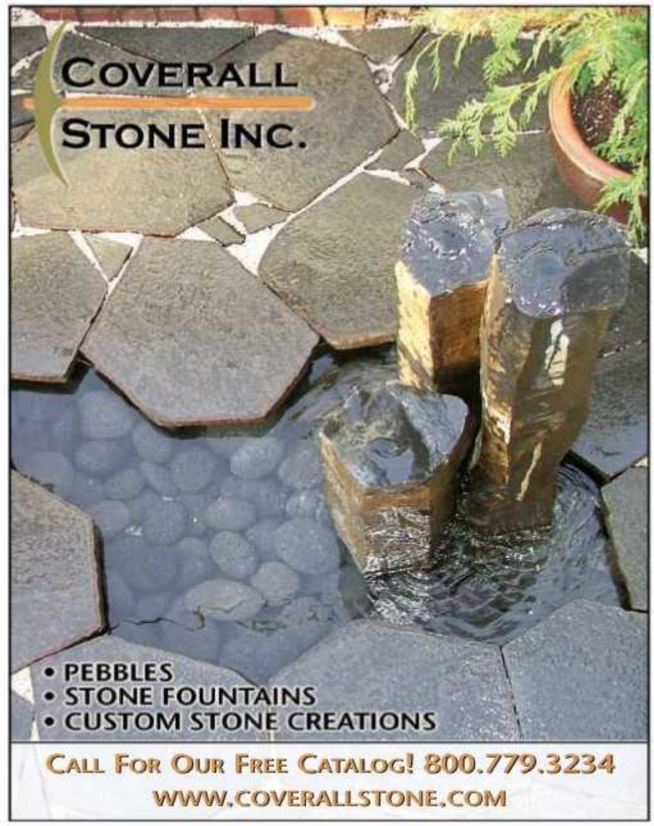


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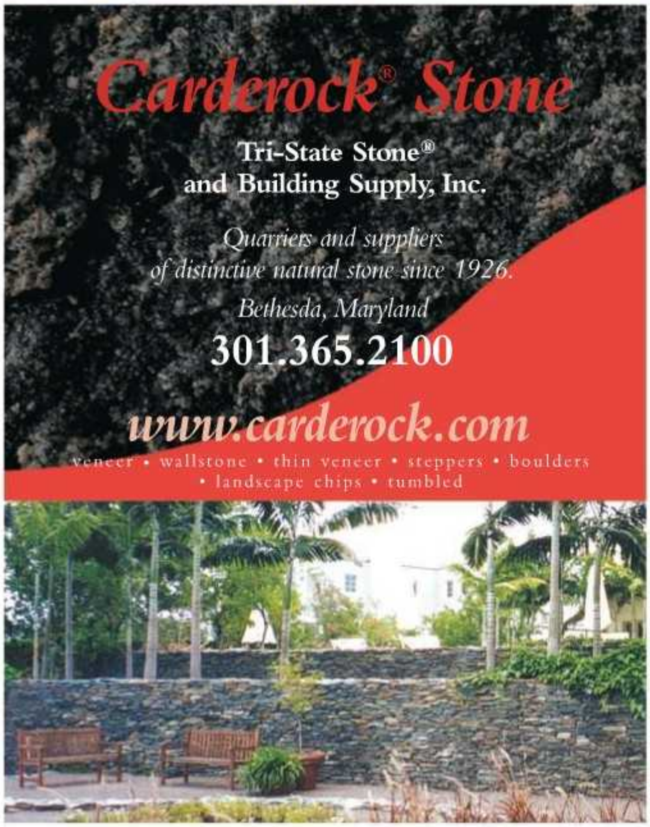


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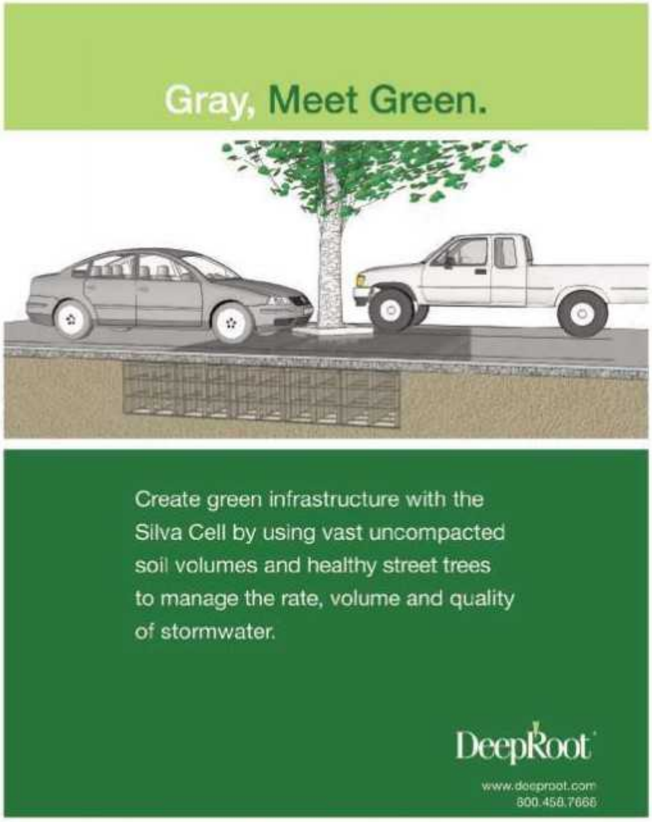
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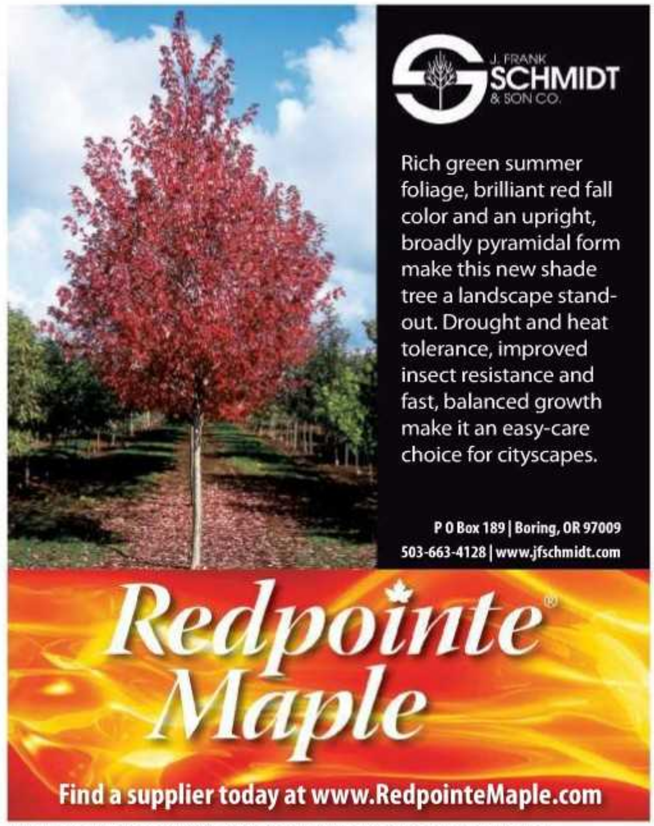
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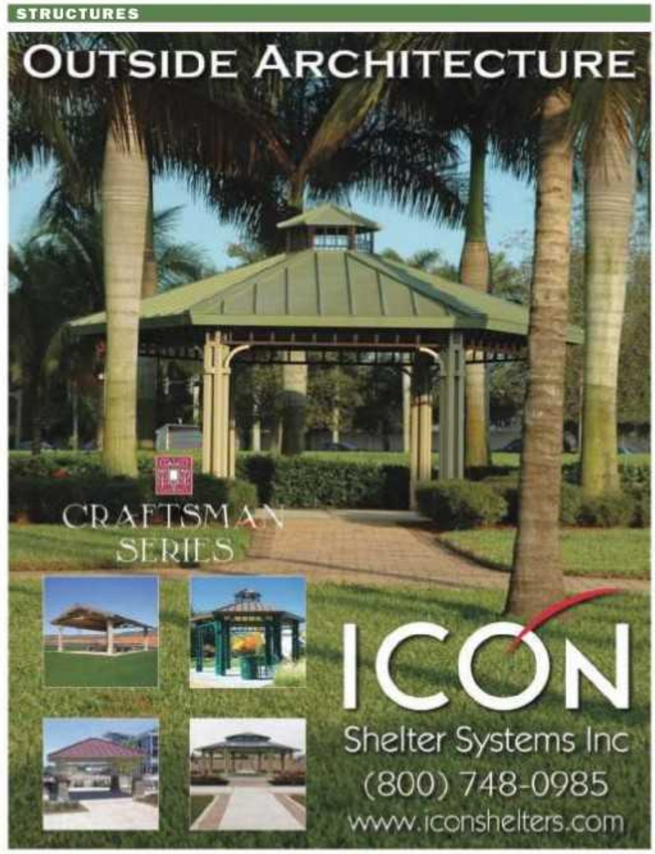
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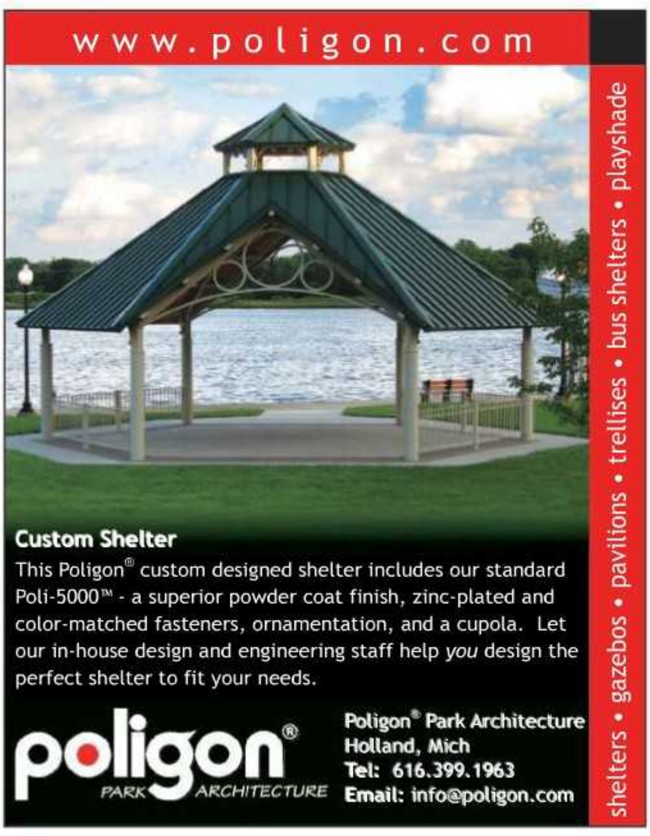




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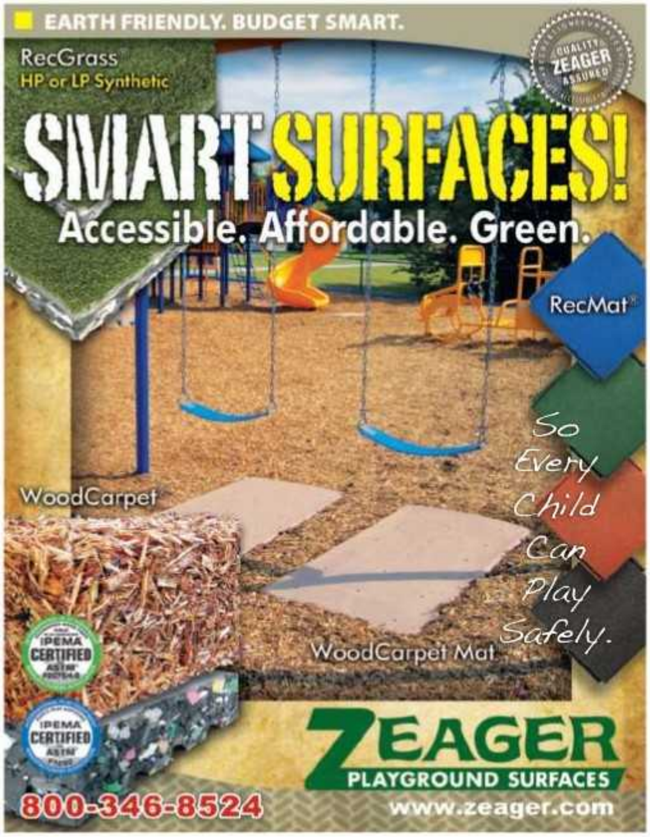


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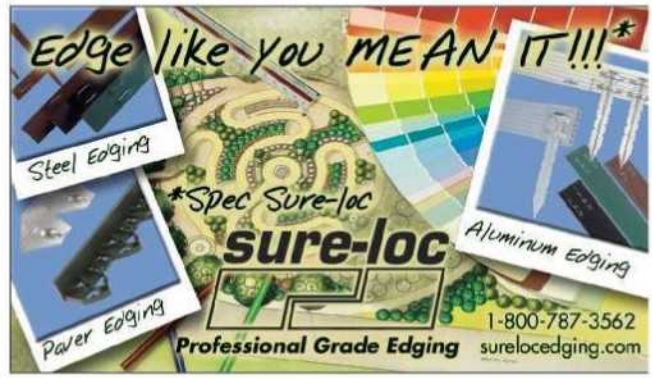
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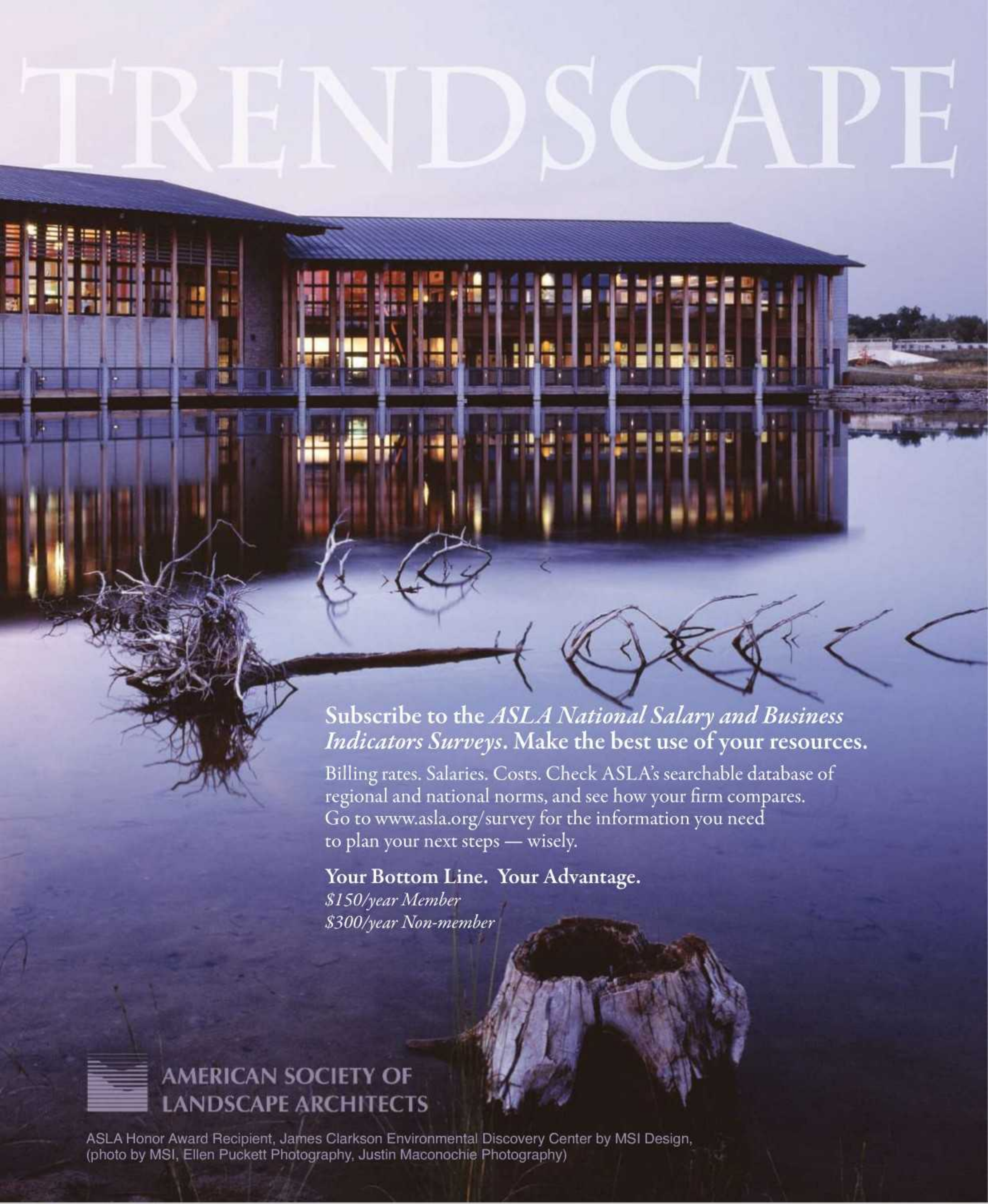


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ASLA Honor Award Recipient, James Clarkson Environmental Discovery Center by MSI Design, (photo by MSI, Ellen Puckett Photography, Justin Maconochie Photography)

ASLA 2010 Residential Furniture Directory



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Custom or Prêt-à-Porter

Landscape Architects Have Many Choices in Residential Furniture



Photo courtesy of Summer Classics

More than 80 percent of private sector landscape architecture firms offer residential design services, and it is far and away the largest market for landscape architects, constituting nearly 40 percent of all billable hours in 2008. During the recession, this market has proven much more resilient than some others. Experts speculate that this could be because savvy consumers realize investment in a home's landscape has the best return of any home improvement, delivering $1.12 to $1.20 on resale for every $1 invested. According to the National Association of Realtors, homes with attractive landscape amenities can command a sale price 11 percent higher than other neighborhood comparables with less attractive landscapes.

A Growing Demand In two recent surveys, *Landscape Architecture* magazine readers and ASLA Annual Meeting attendees identified residential furniture as the top product about which they would like to learn. Designers and furniture industry leaders say that it is becoming much more prevalent for landscape architects to specify and buy the furniture for their projects.

"The variety of design styles for outdoor furnishings is amazing compared to 10 years ago," says J. Brian Sawyer, ASLA, principal of Sawyer/Berson Architecture & Landscape Architecture LLP in New York City. "Previously, we designed most of the furniture to fit into our residential projects. Today, we mostly specify the furniture and choose the fabrics and finishes."

"Landscape architects create a vision for their projects, but in the past someone else has usually selected the furniture," says Henry Andrew Hall, founder of Henry Hall Designs. "Landscape architects should be selecting the furniture to complete their design vision, and I'm glad we're beginning to see this happen in the marketplace."

Design Trends and Materials Furniture style and materials choices appear to be endless, but trends do emerge. "The most evident trend we are seeing right now is minimalism," says Bew White, president of Summer Classics. "A return to classic, contemporary, clean lines and use of simple materials, whether it be all aluminum, weather wicker, or cast." Hall agrees: "The bigger, bulkier furnishings of the past are giving way to a new era of minimalism."

Hall sees a movement away from woven furniture, "which is a major shift, as woven has been important for quite a while." He says many landscape architects prefer teak "for a more natural feel, as long as the teak is sustainable and has qualified environmental certifications."

Stainless steel is another well-liked product, says Hall, as long as it is finished correctly. "Next to the ocean, anything can rust, but if it's at least a mile away, stainless steel offers amazing durability and is a much better product than aluminum." It is, however, also more expensive. "What's popular is a stainless/teak mix, such as stainless legs or foundation, but a tabletop or seat that's in teak."

White recommends resin wicker for its weather resistance, comfort, and flexibility of design in color and weave dimensions. Popular furniture finishes this year are black with gold tones, earth tones, and dark wood tones. Grays in metallic and bronzes are showing up as well. Black and brown finishes in resin wicker are very popular. White says fabrics are leaning toward natural-looking linens or boucles and textured solids, such as dupione or raw linen in shades of gold or gray. "Patterns are used for dimensional purposes only," he advises. "Greens are also important this year, but in shades of medium lime and grass green."



Photo courtesy of Henry Hall Designs

"Landscape architects should be selecting the furniture to complete their design vision, and I'm glad we're beginning to see this happen in the marketplace."
– Andrew Hall, Henry Hall Designs, San Francisco



Photo courtesy of Summer Classics

Richard Arentz, ASLA, of Arentz Landscape Architects in Washington, D.C., mixes textures and materials such as plantation-raised teak with painted metals and ceramics to create a unique look. He recommends outdoor furniture groupings that look more like an interior response. Arentz also agrees on the minimalist design trend. "Modern, classic 1960s aluminum furniture by Richard Schultz seems to never go out of style. Summit is also a great collection for teak furniture."

Performance, Maintenance, and Sustainability Performance and durability are important to landscape architects, who are concerned about sustainability and consider maintenance and replacement cycles in making furniture selections. White agrees. "A product's ability to last for 20 years will greatly reduce our landfills," he says, cautioning that there is a lot of confusion about UV resistance, color retention, and maintenance, particularly in coastal environments. It is important to check warranties and to obtain written maintenance instructions when purchasing outdoor furniture.



Photo courtesy of Summer Classics

"People generally desire low-maintenance furniture, so many clients are choosing the synthetic fibers that are weather- and UV-resistant and environmentally friendly, such as the Dedon line," says Pamela Palmer, ASLA, of ARTECHO Architecture and Landscape Architecture in Venice, California. "For those clients who don't want cushions, the Richard Schultz lines don't need them. Hugonet and other woven 'sling' fabrics don't require cushions either."

"Whether we are specifying or designing outdoor furniture, we continue to require sustainable materials and low- or no-VOC coatings to be incorporated into the products," says Sawyer. "Currently, there are many furniture companies that meet the sustainability requirements expected by landscape architects."

Andrea Cochran, FASLA, of Andrea Cochran Landscape Architecture in San Francisco, agrees. "Wherever possible I look for products that are well designed and use FSC-certified wood. I believe as landscape architects we need to lead by example to preserve the world's forests."

Where to Find It Browse the web sites of the companies listed in this directory for information on local showrooms. Given the heightened level of interest from landscape architects, it is hoped that many of these companies will participate in the ASLA 2010 Annual Meeting and EXPO, September 11–12 in Washington, D.C., allowing the more than 6,000 attendees to see their wares in person. "As a designer of contemporary residential gardens, one of my primary reasons for attending the ASLA Annual Meeting each year is to spend hours—and sometimes days—scouring the EXPO for new styles of furniture and amenities," says Sandra Y. Clinton, FASLA, of Clinton and Associates PC in Hyattsville, Maryland.

Both Hall and White advise landscape architects to visit their local design center. "As well as providing clients with access to better-designed furniture, landscape architects receive significant designer discounts from most outdoor furniture companies," says Hall. Palmer agrees. "In California we are lucky to have the San Francisco Design Center in Northern California and the Pacific Design Center in Los Angeles," she says. "These are great places to take clients where they can see furniture and test it for comfort. A piece of furniture you fall in love with in a photo can quickly become something you no longer desire once you have a chance to test it for your personal comfort. Henry Hall and David Sutherland are our favorite stops for wood furniture."

Visiting showrooms allows designers to test dining chairs with tables of various lines for height compatibility. "Some showrooms 'memo' furniture, which means they will allow a client to see it in their home before purchasing," Palmer continues. "Busy people can test the piece in their home and agree that it is the right piece for them."

Custom Furniture There are still those projects where it is necessary to design the furniture to meet the project requirements, thus requiring a custom fabricator.

"Last year, we designed a complete furniture grouping for a private penthouse roof terrace that required an experienced fabricator using 'old world' craftsmanship in their work," says Sawyer. "We commissioned M. Cohen and Sons to build the furniture from recycled steel. The finished product was a superbly crafted set of powder-coated steel furniture frames hammered to the exact design specified. The furniture cushions and stone tabletops were fabricated by specialty tradespeople."

While there will always be a demand for custom fabrication, Palmer pays the outdoor furniture industry the ultimate compliment. "In the past, when we wanted great furniture—especially modular furniture—we had to design it and have it fabricated by a shop," she says. "Today there are so many great outdoor furniture designers and showrooms that it is a pleasure to incorporate their work into our projects."

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(*Continued from Page 160*) the constraint is not readily apparent.

The result resembles a linear plaza with plenty of space to accommodate both natural systems and social activities. Along the south half of the block, a double row of London plane trees, set into the middle of the sidewalk corridor, creates an alléelike space. The trees are interspersed with long, narrow planting pockets that match the width of the tree pits and align with the gridded treatment of the paving—a very tailored layout.

In one location, where a two-way driveway crosses the sidewalk, low, concrete wall segments and tubular bicycle racks suggest that vehicles are invading the public space rather than usurping it. No fast-moving cars here; this is clearly a space mainly for people on foot.

In the north half of the block, large rain gardens assume a curved configuration, sweeping across the sidewalk in great arcs. The curving forms are reinforced by long, low, metal seating elements. Small, whimsical shapes were cut into the sides of the long, hollow, boxlike benches. LED lighting within the interior produces a soft blue glow in the evening. The seating bars flank the vegetation and create a sharp contrast between high-tech, crisply machined surfaces and soft, multicolored vegetation.

Vine maples at the north end of the street are arranged in a more informal, almost random, manner that contrasts with the more tailored array of trees and understory vegetation at the opposite end of the block. The floor of the space is paved in an orthogonal pattern with squares and rectangles following grid lines into which everything is organized. The result is a richly varied but well-ordered experience within a few hundred linear feet.

Pervious paving material is located just behind the curb line, catching runoff before it reaches the gutter. Across one rain garden a footbridge built of ipe wood planking connects a row of parallel parking stalls with the main entry to the building. A large downspout along the street-facing side of the building directs some water from the roof into a basin of recycled blue



The sidewalk on Taylor Avenue North is divided into channels that allow for both walking and bicycling, *above*, with no signs or striping that suggest separation. A wood walkway, *below*, connecting the building entrance to the curb and crossing over the rain garden is lined with small, raised rails that add a funky detail.



glass chunks and then into another rain garden set against the building. However, most of the water falling on the rooftop is collected in a cistern below grade and used in irrigation and nonresidential toilets.

A few flaws are evident. Because the storefronts are not yet occupied by tenants, it's hard to tell if the street will be as animated as that envisioned by the designers. And the uplight fixtures for street trees are recessed into a surface treatment of loose stone chips—an inelegant detail, as errant chips and leaves are already obscuring the lights.

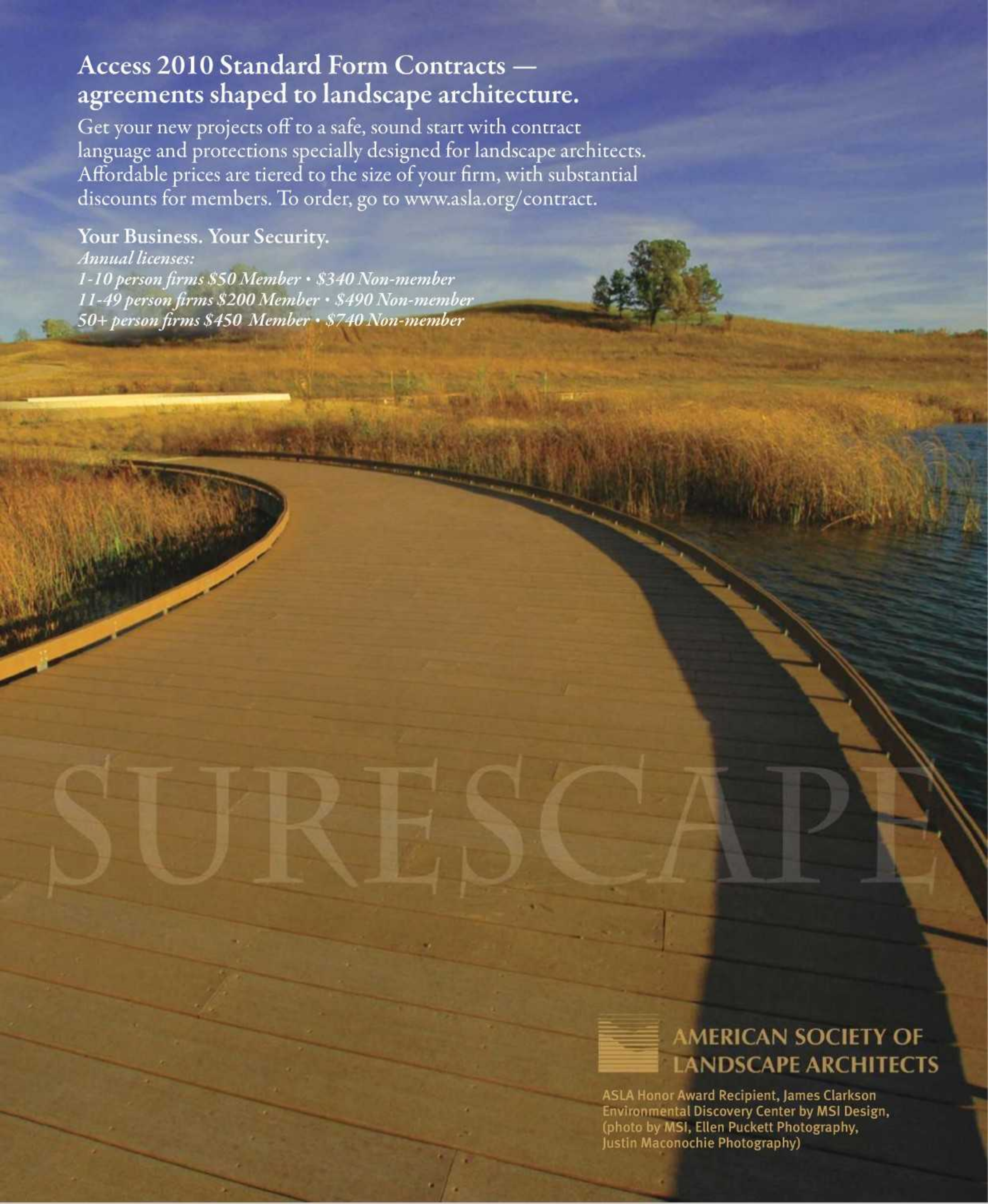
Nonetheless, the space is both well designed and well executed. The latter was due in no small part to the constant vigilance of Lyle Bicknell, an urban designer with the city, who did not allow contractors to skimp or drop items during construction. Despite his dogged commitment, Bicknell is humble about his role in the project. "When you work in the public realm there are so many variables beyond your control," he says. "Good projects are often the result of luck and timing."

And although construction administration was not a part of their contract, the Mithun design team spent a lot of time in the field nonetheless. This close monitoring of the progress of the work is evident in the careful attention to many details.

The Bad and the Ugly

Depending on the source of the quote, either God or the devil is in the details. The recently reconstructed segment of Pine Street between Belmont Avenue and Summit Avenue is a good illustration of the latter. What started out in the design team's drawings as a well-thought-out ensemble of paving, planting, and seating intended to meet the needs of transit users in the dense surrounding neighborhood devolved during construction into what Britons sometimes call a "dog's breakfast."

First, the widened sidewalk feels just as constricted as it always did, perhaps even more so. The previously narrow sidewalk was left intact due to a decision to cut costs, and the new portion was simply tacked on. But where previously a person on foot could borrow space around the trees to pass an oncoming pedestrian, now an odd, six-inch raised curb wrapping around three



ASLA Honor Award Recipient, James Clarkson Environmental Discovery Center by MSI Design, (photo by MSI, Ellen Puckett Photography, Justin Maconochie Photography)



On Pine Street, curbs around raised planting pockets, *left*, constrain the already narrow sidewalk. Since the photo was taken, low grasses have been installed, and the constricting effect is even more pronounced. An uncoordinated array of street furnishings and long concrete seating walls, *opposite*, serves to choke up the available space.

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sides of the trees makes quick side-stepping hazardous if not impossible. Loose mulch was piled up in these containers and spills out onto the sidewalk from the fourth open side. Consequently, the sidewalk seems even less navigable than before.

This diverse and quirky neighborhood is well-known for people hanging out, socializing, and schmoozing on the sidewalks. Cafés, stores, and barbershops often set out chairs or benches for people to sit. So the designers included raised ledges facing each other to add to the ambience. Changes in the field resulted in those elements being deleted. Instead, a long line of low stepped "sitting walls" merely serves to divide the already linear space into narrow channels.

Ostensibly for transit riders, these seating walls are hardly necessary because buses stop at this location every few minutes. In addition, the usual anti-skateboarding nibs were bolted on to make the whole assembly look even cruder. Despite the ridiculously long seating wall, the regional bus authority installed its standard shelter—relating to nothing else on the sidewalk and further choking up the space. As one transit rider commented, "I liked it better *before* they improved it."

Planting pockets enclosed by the three-sided curbs seem as if they were intended for catching and channeling runoff, as the pockets are connected by shallow curved runnels. But at the high end of each runnel is a drain, which would apparently siphon off the water. Furthermore, the level of each planting pocket is actually higher than the runnel leading to it. If there is a stormwater management story here, it is a confusing one.

Clutter abounds. Bike racks are dotted about. Other raised planters appear and then turn to follow the side streets. Three chunks of basalt rock are plopped down, as if there weren't enough seating already. Raised curbs zigzag about every few yards.

What could have been a simple, basic, even graceful combination of elements is instead chockablock with stuff of dubious purpose.



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The Moral of the Story

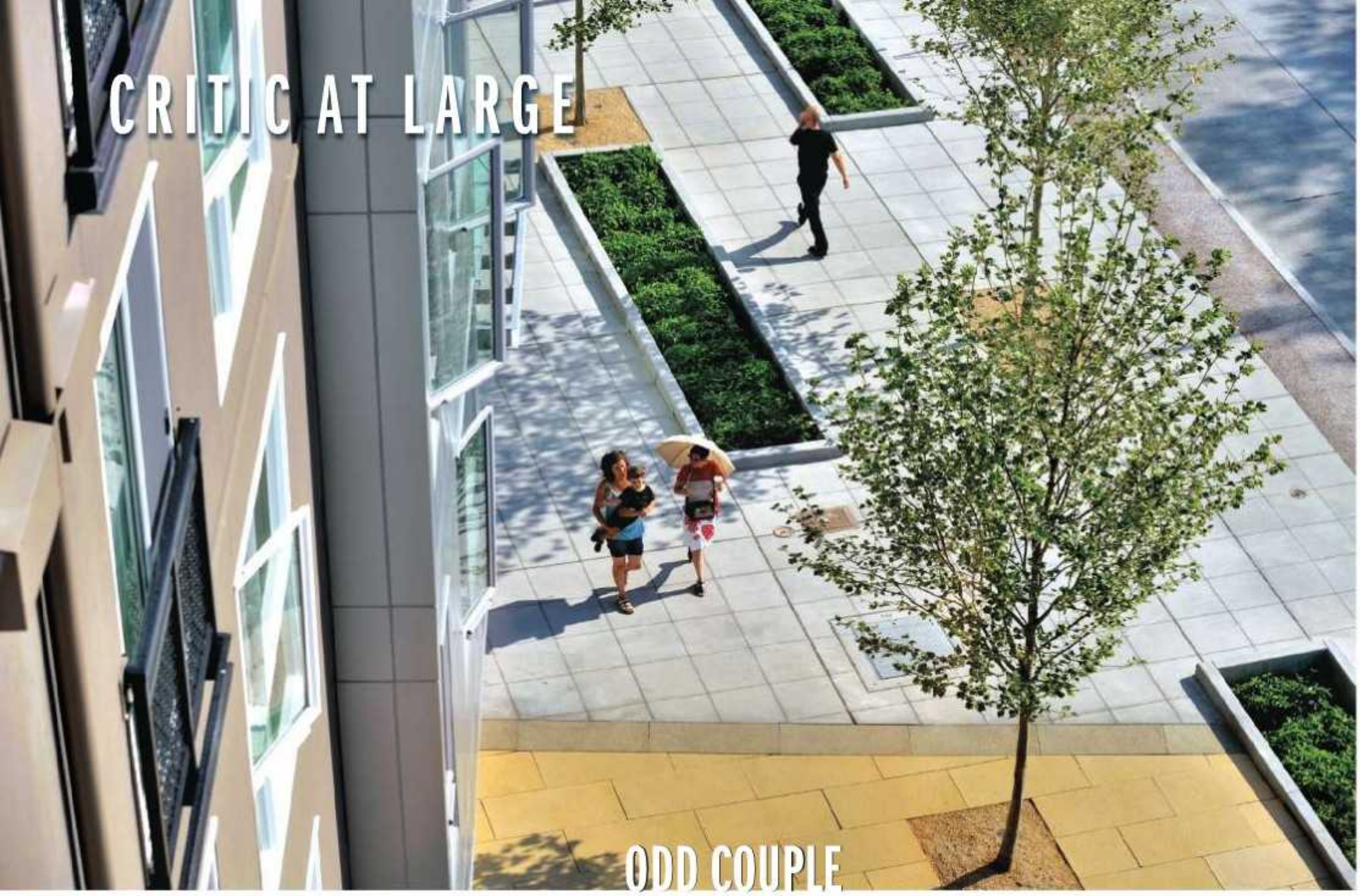
Despite Seattle's generally progressive, enlightened reputation nationally, an attitude continues among the "old guard" engineers in the city's transportation department that places a lower priority on the quality and character of sidewalks. For example, although many other cities have long ago accepted them, bollards continue to be blacklisted in Seattle.

But the Pine Street mess is one streetscape "enhancement" project that seemed to spin out of control from the very beginning. Mithun's original design, though well intended, just tried to jam too many good ideas into too small a space. The effect was that the number of elements invited a kind of ad hoc value engineering in the field. Whole parts were stripped away and new details and odd bits were seemingly improvised. One city staff person, who wished to remain anonymous for obvious reasons, observed, "Well, with public works, sometimes things just get watered down."

Mithun's contract did not include construction administration, so they were surprised, and perhaps somewhat embarrassed, to see how their work had been transformed. And in contrast to the previous project, there was no adjacent property owner to insist upon a quality commensurate with an adjacent new building. Consequently the block seems to float about in some confused netherworld. Is it a wide sidewalk? Is it a thin plaza? Is it a bus stop? With no principal focus and no one truly minding the store, the results on the ground seem cobbled together on the spot.

This unfortunate and vivid contrast demonstrates why it's not just about design. Thoughtful design does not speak for itself. Someone has to speak for it—long, loud, repeatedly, and with passion. The public realm is too important to treat it otherwise. LAM

Mark Hinshaw is director of urban design for LMN Architects in Seattle and is a frequent contributor to Landscape Architecture.



ODD COUPLE

Are good projects the result of good design or good construction (or both)? Two new Seattle streets offer some answers.

By Mark Hinshaw

OVER THE PAST DECADE, the city of Seattle has been experimenting with enhancements to streets and sidewalks that reflect the city's environmental values. Changes to surface water systems, planting, and paving have been accomplished when there has been a need to replace utilities, provide new pavement overlays, or widen sidewalks to make more generous bus stops. For example, when two major downtown streets were recently repaved, a parallel effort replaced sick trees with healthy ones and dramatically enlarged the tree pits, covering them with permeable material.

Sometimes the results are subtle and evident only by a few less square feet of concrete. In other cases, the changes are quite dramatic. Some streets have been entirely reconstructed, with narrowed vehicle lanes, planted drainage swales, and meandering walkways. Although commendable in intent, the results are sometimes less than superior due to changes made in the field or a lack of attention or finesse by the contractors.

Two recent projects illustrate these variable outcomes. Both were designed by the same firm, even by some of the same people. Both attempt to embody sustainable principles. Both are located in dense, built-up areas of the city constrained by development, utilities, and street requirements. But that is where the similarities end.

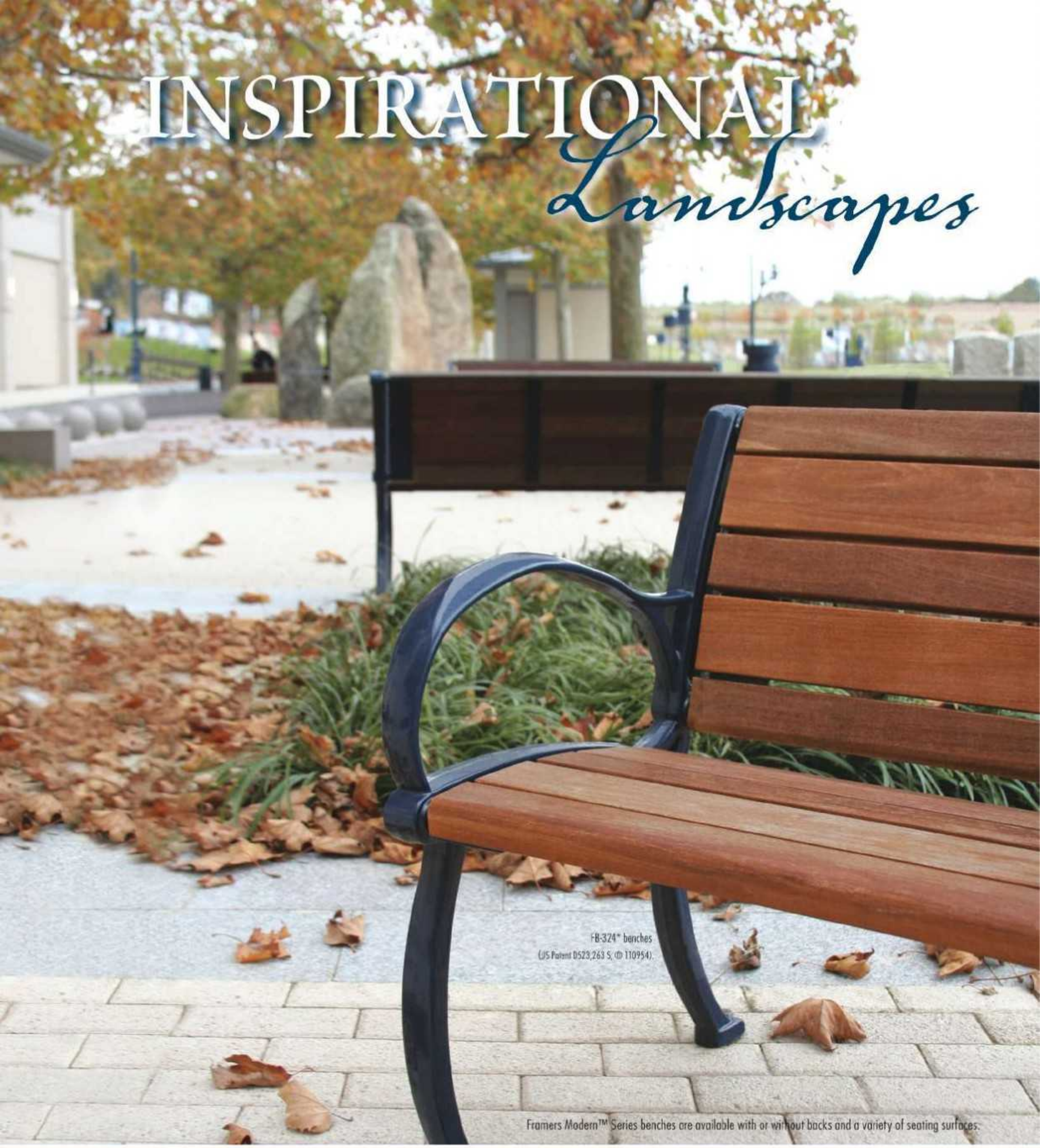
One is elegant, artful even, and displays a care for the craft of how materials are installed, joined, and aligned. The other is clumsy, clunky, and confusing.

The widened sidewalk along the east side of Taylor Avenue North was transformed into a linear public space with ample room for planting and pedestrian amenities.

The Good

One side of a block of Taylor Avenue North in the lower Queen Anne neighborhood was completely reconstructed as a part of a new mixed-use development called Taylor 28. Seattle-based Mithun, an architectural firm that includes a sizable staff of landscape architects, designed both the building and the streetscape. The design of the public space benefited from being able to relate the structure and its functions to the street and its uses.

According to T. Frick McNamara, ASLA, associate principal with Mithun, the design team's greatest challenge was finding places to insert trees and rain gardens into a location where there are a number of utility lines below grade. Although the sidewalk was virtually doubled in width by eliminating diagonal parking stalls, the services stayed where they were near the former curb alignment. On the surface, however, the insertions were accomplished so skillfully that *(Continued on Page 156)*


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